NOVICE LANGUAGE LEARNERS' OFF-SCREEN VERBAL AND NONVERBAL BEHAVIORS DURING UNIVERSITY SYNCHRONOUS JAPANESE VIRTUAL

EDUCATION

by

SATOMI SUZUKI CHENOWETH

(Under the Direction of Linda A. Harklau and Kathryn J. Roulston)

ABSTRACT

Web-based distance language courses have been widely adopted in university education. These courses are often delivered via synchronous (real-time) audio-based conferencing software (i.e., *Wimba*) without a web camera; however, there are numerous unknowns about the class participants' learning processes and their off-screen behaviors because their off-screen environments are invisible to the instructor and class members. In such a classroom environment, the interaction is accomplished without visual clues such as facial expressions and gestures, and how learners are situated in the physical environments is unknown. Such concerns have been addressed in a small yet growing number of studies on computer-based second and foreign language instruction. The majority of research has documented learners' online discourse and performance, whereas very few researchers to date have looked at the off-screen behaviors and activities of second and foreign language learners in their physical environment while they sit in front of their computers at home or in their offices. This dissertation reveals and highlights the importance of off-screen verbal and nonverbal behaviors of focal students in their physical environments when logged into an online Japanese class; the class is mediated by audio-based conferencing software. The primary data consist of video recordings of three focal students filming themselves using a video recorder in front of their computer screens during class sessions. Student videos were synchronized with archived sessions of online instruction that included the instructor and other classmates (~60 hours). Other data included essay assignments, surveys, and interviews. Multiple theoretical and methodological lenses were applied to the data, including conversation analysis (e.g., Heritage, 2005; Sacks, Schegloff, & Jefferson, 1974) and ecological approach to language learning (e.g., Kramsch, 2002; van Lier, 2000, 2002, 2004). Analysis of interaction between a student as a nominated speaker and the instructor suggests that the online forum for instruction was characterized by teacher control that was reinforced by the software characteristics. However, focal students' off-screen behavior suggested that they gained significant affordances from the online format, namely, opportunities to freely vocalize their speech without being heard. For instance, the learner's off-screen speech was dialogically elicited by other participants' online interactions while the learners privately examined and contemplated their own and others' language use. The study illustrates the potential of online learning to promote increased learner agency and autonomy. It reveals rich information about beginning students' learning behaviors that are not normally demonstrated in classroom environments.

INDEX WORDS: Second language acquisition, distance language education, online instruction, off-screen, synchronous computer-mediated communication, conversation analysis, learner autonomy, Japanese

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by

SATOMI SUZUKI CHENOWETH

MA, Georgia State University, 2003

BA, Metropolitan State College of Denver, 1998

BFA, Tama Art University, Japan, 1996

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

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SATOMI SUZUKI CHENOWETH

Major Professors:

Committee:

Linda A. Harklau Kathryn J. Roulston Don R. McCreary Victoria Hasko

Electronic Version Approved:

Maureen Grasso Dean of the Graduate School The University of Georgia August 2011

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CHAPTER 1

INTRODUCTION

Organization of dissertation

This dissertation is organized into six chapters. Chapter 1 gives an introduction to the study background, describes the study method, addresses problem statements and research questions, and emphasizes significance of the studies to the field. Chapter 2 describes a literature review on related topics and the theoretical frameworks adopted in the research. Additionally, study methods are discussed. The next three chapters were written as independent studies, organized in manuscript style. Although the studies shared the same data set and used synchronized online and off-screen video data and other data such as interviews, survey, field notes, etc., theoretical approaches taken for each chapter were varied. Chapter 6 provides conclusions, including a summary of the study findings and implications to the field.

Background of study

This dissertation stems from my personal experience teaching and co-developing online Japanese courses as part of a distance education program at Georgia Institute of Technology (GA Tech) for the past eight years. Fleming and Hiple (2004) re-defined Keegan's (1990) classic definition of distance education as the separation between teacher and student where the communication must be electronically mediated and initiated bi-directionally. However, White (2006) calls for a new definition that accounts for pedagogical and human perspectives, reflecting a synthesized view among practitioners, researchers, and learners. She states that what makes the distance language learning unique yet challenging is the fact that there is no teacher at

the students' physical location to assist and guide them through their learning. Therefore, a new definition of online education is still exploratory and must reflect complex settings and course delivery modes due to human, institutional, and sociocultural factors (White, 2005, 2006).

The development of GA Tech's online language courses was initially funded by a National Security Education Program grant awarded to the University System of Georgia in 2001. When I joined the GA Tech Japanese program in 2003 as an instructor, course development was led by an associate professor, Dr. Masato Kikuchi. When I first agreed to collaborate with him, I had limited knowledge about online language education and technology in general and equally sparse knowledge about what the project would entail. However, as I became involved, I realized the importance of course development. It was rewarding to participate in the project because of the countless opportunities that online courses can provide to students who desire to learn a new language and study other cultures regardless of their geographical location. My past online students had included not only on-campus students in the area, but also learners across the continent.

For these courses, the widely used audio- and text-based conferencing software *Wimba* (Appendix A) was adopted as a synchronous component of the course instruction. This software allows instructors to lead class sessions at a designated time when students have reliable computers and internet connections. Classroom interactions are facilitated via chat tools, in which the participants use a headset with a microphone, in addition to visual presentations projected on an e-board. However, these courses do not allow for video images of class members or their physical locations. Therefore, the kinds of interactional cues that are normally observable in face-to-face (F2F) classroom settings, such as facial expressions, postures, gestures, and how

students are situated in physical locations, are missing from online classes. Such interactional features are virtually unknown to anyone except the learners themselves.

Table 1 compares the available modes of communication for language learners participating in online language courses (i.e., *Wimba*) with communications between students and teachers in F2F classrooms and telephone calls.

Table 1

	Shared	Shared	Allow	Visual:	Accommodate
	voice chat	text chat	simultaneous	e-board,	multiple
			communication	presentation,	participants
				writing tool	
F2F classroom	Yes	No	Yes	Yes	Yes
Telephone call	Yes	No	Yes	No	No
Online class (<i>Wimba</i>)	Yes	Yes	No	Yes	No

Comparison of the available modes of communication in various settings

As an online language instructor, I can only imagine students engaging in class instruction, sitting in front of their computers in their homes and/or offices, based on their voices and the occasional background noises overheard via the audio connection.

I conceived ideas for the current research project in this class setting, where students are simultaneously immersed in online/virtual and off-screen/physical (see Definitions below) environments. More specifically, I was forced to reconsider the meaning of a "classroom environment" and the behaviors in which the instructor and the students are expected to engage within the institutional setting. It appeared to me that the existing notions of a classroom environment did not seem to translate well into the new learning environment. For instance, there were occasionally lengthy delayed responses from students or non-responses when I called their names. I also noticed the students' activities behind the screen, such as using the computer for purposes other than class activities and chatting with someone in the physical environment. At first I believed these behaviors to be negative influences on students' learning, but I also wondered what these off-screen activities really meant in relation to the students and their ability to learn.

My growing interest in understanding how students' language learning takes place in the online/off-screen environment motivated me to conduct several preliminary studies. These studies primarily examined online classroom discourse based on archived sessions and the students' learning experiences as reflected in surveys and interviews, as well as my observations. Students' self-reports provided some evidence that they do engage in various other activities in their off-screen environments. However, one of the interviews I had with an intermediate online Japanese student, Megan (pseudonym), caught my attention. She took two F2F elementary Japanese classes at the institution prior to enrolling in the online course. She expressed her regular off-screen verbal engagement, rehearsing the language during the online course. She described her differential learning behaviors in the F2F versus online learning environment as follows:

There is more time to answer your [the instructor's] question, I guess, because..((laugh)), because it could be, sometimes ((laugh)) I'll rehearse it. I'll rehearse the answer after he [the instructor] asks me questions. I'll rehearse the answer, and then say it. So, I make sure that what I'm saying is right, whereas if you're right there in front of the teacher,

you don't have time to rehearse the answer so much. (Interview with Megan, October 17, 2007).

She further expressed her frequent use of a notebook during an online class, whereas this was not allowed when she was in classroom-based Japanese courses. The classroom teacher repeatedly stated that she needed eye contact to ensure students had the information memorized, rather than reading it from the textbook or notebook.

Megan's description of her off-screen behaviors in the online/off-screen course setting was a revelation to me. It gave me greater insight into this student's perspective and helped me understand how her learning occurs in the online course setting. It convinced me that there must be alternative methods that students adopt in their physical/off-screen learning contexts, even though these normally do not come to the attention of teachers and researchers focusing on "online" environments.

In 2008 I conducted a pilot study that examined students' online and off-screen behaviors. Four participants (two female and two male students) from two sections of online Elementary Japanese 1 participated in this study. I collected two kinds of video data: 1) archived sessions of class instruction in the online environment (6 hours), and 2) videos of students' behaviors and activities in the off-screen environment (approximately 6 hours by each student). I asked the students to use a camcorder to film themselves as they participated in class. I then took on the challenging task of synchronizing the two sources of video data in order to observe online class instruction and students' off-screen behaviors in the physical environment simultaneously. Synchronizing the two sets of video data required numerous attempts, including experimenting with three different brands of editing software. This process required converting the files into a format compatible with the software and adjusting the speed of recording so that the length of

online and off-screen files matched. With the assistance of technical experts using *Adobe Premier Pro CS4* to synchronize the two types of video data, I finally was able to create recordings of simultaneous activities online and off-screen in a picture-in-picture format.

The pilot study confirmed the viability of the methodological approach of asking students to video-record themselves and synchronizing video of class sessions with student off-screen behaviors. I was able to document three of the four participants' active off-screen verbal engagements in the target language (TL) during class periods, even when no one was prompting their speech. Other off-screen behaviors were also filmed, including students yelling at their computer screens; browsing websites, including both course-related and unrelated sites; checking messages on cellular phones; and interacting with other people in their physical environments. In an after-semester interview, one of the students bluntly described his regular use of eBay.com during class time.

The following semester, I enrolled in a beginning online Chinese class at GA Tech as a student and gained additional insights into what online language learning entails through my own perspective and experience as a learner.

Based on these experiences, I was convinced that online course students' off-screen behaviors and activities in their physical environment play an important role in their language learning processes and outcomes. However, to my knowledge there is no documented research as yet that focuses on the learners' off-screen behaviors in online language course education using audio-based conferencing software. Considering students' off-screen behaviors in their physical environments is crucial for improving our understanding the second language (L2) learning processes of students in synchronous online settings.

As exemplified by the current level of online classes in which instruction is mediated by technological tools, an increasing number of online language courses have been adopted as acceptable modes of university education. Blake (2009), a leading researcher of online language education, predicts that this trend will continue to grow regardless of practitioners' and institutions' acceptance of technology-enhanced learning environments. However, concerns about web-based language education remain. Such concerns have been addressed in a small yet growing number of studies done by researchers who develop and/or teach distance-based language courses. The majority of these studies have examined students' perceptions of online courses and software utility and the effectiveness of online learning compared with traditional classroom learning (e.g., Blake and Delforge, 2005, 2007; Chenoweth, Ushida, & Murday, 2006). In addition, ample studies have been conducted in terms of second language acquisition (SLA) using text-based computer-mediated interactions by L2 learners. Some of the text-based interaction research has focused on negotiated interactions in classroom environments (e.g., Abrams, 2003; Loewen & Erlam, 2006; Pellettieri, 2000; Smith, 2004; Sotillo, 2005; Tudini, 2003; Warschauer, 1996), whereas others have investigated pragmatic ability and cultural awareness when students gain opportunities to interact with target language (TL) communities across borders (e.g., Belz, 2003; Belz and Vyatkina, 2005, 2008; Darhower, 2002, 2007; Hanna & de Noohy, 2003; Kinginger, 2000).

These studies help us understand how technology-enhanced learning can benefit second language acquisition, yet the majority of the literature has focused on the "online/virtual" component of the students' learning behaviors or their L2 learning outcomes. Surprisingly few researchers have investigated the off-screen behaviors and activities that L2 learners engage in while in their physical environments participating in technologically mediated communication.

The current study addresses this gap. It follows a handful of precious studies yielding intriguing findings. For instance, some researchers have found that students vocalize the TL in front of the computer while engaging in text-based computer mediated-communication (CMC) (Payne and Whitney, 2002; Smith and Gorsuch, 2004). This suggests that students' off-screen behaviors during online instruction are consequential for learning. Smith and Sauro used an innovative data collection method during learners' text-based interactions (Sauro and Smith, 2010; Smith, 2008); using printed chat logs, they compared students' linguistic usage during online interactions with screen-captured student texting behaviors, including those when the learners were composing and editing text messages. These researchers suggested that off-screen data sources include rich information that can improve our understanding of L2 acquisition.

These studies suggest the potential benefits of understanding the role of off-screen behaviors in second language acquisition. However, thus far studies of students' off-screen behaviors during online interactions have tended to focus on relatively limited L2 acquisition phenomena. In particular, no distance education research has documented learners' off-screen learning behaviors while participating in a course. The current study addresses this issue by examining the off-screen component of the language learning process; specifically, it examines learners' behaviors not only in their online classroom but also in their physical environments, with an emphasis on the learners' perspectives.

Definitions

In this study, I use the term **online** to indicate a state of technological connectivity. The students are online when they have connected to the class via the internet and the virtual classroom software. I self-define the term **off-screen** as the physical, verbal, and non-verbal actions of individuals during synchronous online interactions that are not apparent to other online

participants. Such actions are influenced by the students' physical environments as they sit in front of their computer and may or may not be related to what is transpiring online. These actions are invisible and inaccessible to others because they do not appear on the computer screens of fellow online participants. Thus the actions are literally absent or "off-screen" from others' view.

Methods, problem statements, research questions, and significance of the study

The study methods are summarized below. This dissertation is organized in a nontraditional format; chapters 3, 4, and 5 were prepared as manuscripts for journal publication, each addressing a different topic and issue and each followed by study-specific problem statements, research questions, and significance.

Methods

Participants in the study included nine students who enrolled in the online Elementary Japanese 1 course at GA Tech in Spring 2009. The class was conducted in virtual classrooms using audio-based conferencing software, *Wimba* (Appendix A). Three of the students – Mei, Soo Yun, and Josh (pseudonyms) – agreed to film their off-screen behaviors in their physical environments during the class period. I taught the course, simultaneously acting as a participant observer.

I collected two types of video recordings as primary data sources: the archived online classes (approximately 27 hours) and films of focal students' off-screen behaviors during a semester of virtual class time (a total of approximately 60 hours, 20 hours from each student). These files were synchronized using *Adobe Premier Pro CS4*, which allowed me to view online class sessions and focal students' off-screen behaviors simultaneously (Appendix B). Other data included essay assignments, surveys, interviews, field notes/observations, a journal, the course syllabus, lesson plans, learning materials, and the course website.

I began recording online classes the first week of the semester using a *Wimba* archival tool that is a built-in feature of the software. On the third week I made an announcement of the study via email, and all students approved of its conduct. Three students further agreed to participate as focal students and signed consent forms. I met them individually on campus and provided them with a camcorder, recording disks, and instructions (Appendix C). By the fifth week they were ready to film their off-screen behaviors. The duration of focal student filming was between 60 and 80 minutes for each class over a period of approximately 10 weeks.

Verbal and nonverbal behaviors observed in the video data were transcribed and analyzed through multiple theoretical and methodological lenses (Appendix D). These activities included conversation analysis (CA) (e.g., Heritage, 2005; Sacks, Schegloff, & Jefferson, 1974). Initially I took notes while viewing each student's video recordings. I developed rough transcriptions of all archived online classroom discourse and the focal students' off-screen behaviors. Then I analyzed the data based on the rough transcription and selected sample data. As I repeatedly watched the video, I developed more detailed transcriptions of the sample data based on the Jeffersonian convention (Schegloff, 2007) (Appendix E), and continued to analyze it according to each study's purpose. I used other data sources as necessary, such as the field/observation notes, journal, interview, survey, students' essays, and additional archival data.

Chapter 3

I will argue the vital role that the student's physical environment played during the synchronous online instruction while the student observed an online teacher-student interaction. It is in the physical location where the student's agency and autonomy were enhanced in contrast to the controlled online learning environment. The purpose of this study was to investigate interactional norms developed by one focal student, Mei, in both online and off-screen

environments. Guided by the CA framework (e.g., Heritage, 2005; Sacks et al., 1974; Schegloff, 2007), I examined the student's verbal and nonverbal behaviors in her physical environment as she observed online interaction between the instructor and a nominated speaker.

I addressed the following questions:

- 1. What kind of interactional norms are developed by the focal student's off-screen behaviors in her physical environment?
- 2. What is the role of the physical environment in her learning a new language in the online/off-screen course setting?

This study is significant for online language practitioners and researchers because it will give them new insights on the important role that a student's physical environment plays during online language instruction. Examination of the learner's off-screen behaviors provides rich information about individual learning processes that are normally inaccessible to language teachers and researchers. The kind of affordances created in the physical environment by learners can be better understood by investigating their off-screen interactional behaviors. In addition, this study is of interest to SLA researchers in understanding how learners' autonomy and agency can be enhanced in the less-controlled environment, even in the learning context where students may appear to be mere observers of interactions.

Chapter 4

I argue the vital role that students' off-screen behaviors in their physical environment play during online language instruction. It is this very context where countless potential benefits of language acquisition emerge through the learners' active engagement, utilizing their semiotic tools. The purpose of this study is to examine three focal students' off-screen learning behaviors and activities in their private environments and the role these played in the students' language-

learning processes during computer-based Japanese language instruction. Guided by the ecological and semiotic approaches to language learning (e.g., Kramsch, 2002; van Lier, 2000; 2002; 2004), I investigated the affordances and constraints that emerged in the students' off-screen language learning environments.

Specifically, I addressed the following questions;

- 1. What are online students' off-screen learning behaviors during class sessions?
- 2. How do the off-screen learning behaviors influence students' language-learning processes?
- 3. What kind of affordances and constraints emerge in the online/off-screen course setting?

This study contributes to an understanding of the nature of online language learning from the learners' perspective. It will give language researchers, practitioners, and technologists' valuable insights into the online learners' language acquisition process and their mediated activities as they use their resources in the physical environment. I emphasize the consideration of the methodological approach taken in this study in future research as I argue the importance of examining the critical role that the learners' physical/social environment plays during the virtual language instructions. The study findings may be beneficial for language educators who are considering adopting new classroom tools by highlighting the kind of affordances and constraints that students might encounter in technology-mediated learning situations.

Chapter 5

I argue the importance of incorporating the examination of students' physical environments in research involving computer-based instruction; this may unveil great potential for language acquisition opportunities even when the students are not verbally active in the

online environment. This also might help us understand the unseen learning behaviors that students engage in off-screen that are different from what is visible to researchers and practitioners in the online environment. However, thus far, the students' engagement in their private environment during online instructions has been severely under-examined. The study focuses on two focal students' correction behaviors in a classroom setting, one of the well-studied topics in the second language acquisition (SLA). However, my focus is on the investigation of student-initiated off-screen self-correction and other-correction behaviors in their physical environment while they are not nominated speakers and therefore not verbally active in the online environment. Guided by a CA for SLA framework (e.g., Kasper, 2009; Markee, 2000), the study addresses these two questions: 1) What kind of correction behaviors was initiated by the learners themselves in the online/off-screen learning environment? and 2) what role did the learners' physical environment play in the online/off-screen course setting?

The significance of the study is in its innovative approach to the methodology, which included the incorporation of data about the learners' physical environments in the study. The study provides rich information about the students' learning processes because it helps us understand what role physical environment plays in a course setting that uses audio-conferencing software. Findings are significant for SLA researchers in classroom discourse by fostering consideration of not only teachers' correction behaviors, but also of how student-initiated correction helps us understand language development. The findings also provide evidence that an online instructional context might be the most beneficial for some students. Additionally, the study contributes to an understanding of the importance of learners' active engagement in class even when they may appear to be mere observers.

This section introduced the dissertation and discussed its organization, followed by background information and study methods. Problem statements, research questions, and significance of the studies to the field were included in each chapter.

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CHAPTER 2

LITERATURE REVIEW

In this chapter I present the literature review and describe the theoretical frameworks guiding the research. First, I will give a background of distance language education. Second, I will provide an overview of second language (L2) learning and technology, with emphasis placed on the studies conducted in the text-based computer mediated-communication (CMC) environment. Third, I will describe a limited number of relevant studies that examined learners' behaviors in the off-screen context while they were engaging in technology-based tasks. Fourth, I will review the theoretical frameworks that guided me in each manuscript. This review will begin with an overview of conversation analysis (CA), an approach to examining talk-in-interaction. This will include its application to other interactional contexts such as institutional talk, and CA in second language acquisition (used in chapters 3 and 5). Next, I will review the ecological and semiotic perspective to language and language learning (used in chapter 4). Lastly, I will describe second language acquisition (SLA) cognitive interaction (used in chapter 5).

Distance language education

According to White (2006), the evolution of distance language learning opportunities has been largely dependent on the advancement of technology. The decades since the 1970s can be divided into four generational models, representing what constitutes distance language education opportunities. The development with the first generation model predominantly adopted printbased courses in the 1970s, and today the fourth generation utilizes an interactive synchronous

technology to assist learning/teaching. The second and third generation saw advancements in broadcast technologies, multi-media such as audio and video, CD-ROM media, asynchronous computer-mediated communication (CMC), etc.

With the advancement of technology and societal needs, an increasing number of distance language courses have been developed to complement existing educational programs. For instance, the Sloan Consortium (Allen & Seaman, 2006 as cited in Blake, 2009) reported in the fall term 2005 a 40 % increase in student enrollment of online courses from the previous year at a US higher education institution. The figure increased from approximately 2.4 million to 3.2 million higher education students; many of these students are undergraduates belonging to large universities. According to White (2005, 2006), distance language programs have shown more complexity and variety in recent years in terms of course settings and course delivery modes due to human, institutional, and sociocultural factors. Fleming and Hiple (2004) re-defined Keegan's (1990) classic definition of distance education as the separation between teacher and student where the communication must be electronically mediated and initiated bi-directionally. However, White (2006) believes that the classic definitions focus largely on organizational or technological concerns, yet they lack in terms of pedagogical and human perspectives. She perceives the need for developing an adequate definition for distance language learning and teaching, which reflects the synthesized perspective from practitioners, researchers, and learners.

A variety of distance language education research has been conducted at different institutions in the past decades. Some studies examining the online language course education in a university undergraduate setting have described the challenges developing online courses (e.g., Fleming, Hiple, & Du, 2002; Garing, 2002; Poon, 2003; Strambi and Bouvet, 2003; Wang, 2004), while others have focused on assessments of technology-enhanced language courses.

Some assessment studies looked at students' perceptions of courses and tools. For instance, Hample and Hauk (2004) found both students and tutors of German showed positive responses to their experiences delivered by technology, yet technical problems surfaced. Similar to the above study, technology problems as well as a lack of human interaction in online learning were frequently perceived as drawbacks of online courses by students (e.g., Chenoweth, Ushida, & Murday, 2006; Hansson and Wennö, 2005; Vonderwell, 2003; Wang, 2004). Research also suggested that the teacher plays a critical role in sustaining learners' positive attitude and motivation in online classes (Chenoweth, et al., 2006; Strambi and Bouvet, 2003; Ushida, 2005).

Other studies looked at the effectiveness of online language courses, comparing hybrid and/or face-to-face (F2F) learning. For instance, Cahill and Cantanzaro (1997) investigated the writing ability of first-year students enrolled in an online Spanish course. The results suggested that the online students significantly outperformed those students in the classroom-based courses. The authors believed online students' exchanging electronic messaging might have contributed to their additional target language (TL) writing exposure. Blake and Delforge (2005) also examined the effectiveness of the online course Spanish Without Walls at University of California, Davis, compared to the F2F counterpart in terms of grammar accuracy. The learning outcomes of the distance course adult students (n=21), who were motivated to learn the TL for professional development, demonstrated comparable ability to those in the classroom-based courses, even though 71% of the online students had no TL experience in the past. In addition to examining the written ability, Volle (2005) analyzed the oral fluency of first-semester online Spanish learners who are military personnel and their family members located around the world. The students' learning progressed without any F2F meetings. The results showed overall improvement of their oral skills, but no significant differences were found in terms of

articulation. Blake, Wilson, Cetto, and Pardo-Ballester (2008) examined the oral proficiency of first-year online Spanish course students, compared with those in the F2F and blended courses. A major difference among the classes was the students' physical contact hours with the class members. While hybrid learners were given some instructions in a classroom environment, the online students were provided their instructions only via the voice and text chat environment. The oral proficiency was measured using an instrument administered by phone, which was automatically scored by speech recognition and parser software. The results showed that the level of oral proficiency developed among the students in varied course formats was comparable. Similarly, in a hybrid course setting, Chenoweth and Murday (2003) compared learning outcomes of the Elementary French students who enrolled in an online course with those in a traditional course. The conventional class met four days a week for 50 minutes per each session. In contrast, the online course met once a week for 1 hour and 20 minutes. Additionally, a weekly hour-long online text chat session along with assignments using emails and an electronic bulletin board was required for the online students. The learning outcomes were assessed by the final exam in terms of the grammatical knowledge, written production, listening comprehension, and reading comprehension. The oral production was evaluated by two interviews conducted during the semester. The results suggested the hybrid courses were comparable to the traditional courses whereas the online students reported less time studying the subject. In the same project at the institution, Chenoweth et al. (2006) conducted a large-scale study, which investigated the students' learning outcomes in Spanish and French hybrid courses. The data were collected from elementary and intermediate students who enrolled in multiple sections of the hybrid and traditional courses. The same instruments were used to assess the students' performances (Chenoweth and Murday, 2003). The results suggested that overall the online students'

performances were comparable to those of offline students, including oral production. The qualitative data suggested a need for more technical support and increased teacher guidance for student in online courses.

Second language learning and technology: Text-based CMC

The numerous benefits of using technology and computer-assisted language learning in second language acquisition have been well-documented since the 1990s. Among the various types of CMC such as audio-, text-, and video-based interactions, the text-based CMC has been most widely studied in relationships to L2 and foreign language (FL) learning. While the scope of what constitutes technological tools is expanding even more with the introduction of *wiki*, *blogs*, *Pod casts*, etc., in this section, I will focus on giving an overview of text-based interactions via computer in the application to L2 learning contexts.

CMC has brought an immense opportunity for language learning and learners. It is defined as "communication that takes place between human beings via the instrumentality of computers" (Herring, 1996, p.1). The concept of communicative affordances is essential for understanding electronic communication because there is a potential to impact the way the communication is facilitated and/or confined (Levy & Stockwell, 2006). Hutchby (2001) believes that communication via technology is multifaceted. It is shaped by dynamic relationships between the normative structures of conversation and the communicative affordances offered by a variety of technological modes.

English discourse features in CMC texts are suggested that they do not resemble either written or spoken discourse (Gains, 1999; Yates, 1996), yet they do share both features at the same time. Yates' study comparing corpus data of written, spoken, and CMC text features indicated that CMC discourse shares with written discourse in terms of type/token ratio and

lexical density, while they are substantially different in terms of pronoun and modal auxiliary use. A frequent use of abbreviation in text-based CMC suggests that speakers' intent to reproduce oral-like discourse by reducing the temporal gaps between turns (Werry, 1996). In terms of L2 learning, the written modes of CMC have been examined in terms of asynchronous and synchronous communication; however, each component carries different characteristics; thus it can be applied differently into learning contexts (Abrams, 2003; Levy & Stockwell, 2006).

In the following section, I will review studies of technology use in L2 classrooms. These studies mostly examined the text-based interactions in a school computer lab setting while students simultaneously engage in synchronous CMC. The text-based chat logs were compared with oral discourse in a F2F setting in terms of the benefits of L2 learning and teaching.

In the early studies of written CMC, more optimistic benefits of computer usage in L2 learning were reported. For instance, a larger amount of language during text-based classroom discussions via technology was observed than those found in F2F interactions (e.g., Beauvois, 1992, 1994-1995; Chun, 1994; Kern, 1995). Specifically, the students' use of more TL and less first language (L1) use were documented. In addition, more complex and formal language was observed (Kern, 1995; Warschauer, 1996). In terms of the learners' behaviors, their increased participation was reported. For instance, in Warschauer's study comparing online discussions with those with F2F interactions by English as a second language (ESL) learners, passive students participated more in text-based interactions than those in F2F classroom context, whereas vocal students tend to listen to others' opinions more frequently in online contexts. He claimed that the amount of participation was more equalized in the online interaction (also see Bump, 1990; Kern, 1995). Also, slower paced interactions in online text-based communication

were suggested in comparison to oral F2F interactions due to the use of technological features. The characteristics of the medium provided students extra planning time to process and produce the language (e.g., Beauvois, 1992, 1994-5). Some researchers suggested electronic discussions might foster fluency and help to build learners' confidence in using the TL, whereas developing accuracy of language may suffer (Kern, 1995).

Contrary to a traditional classroom where a teacher's control can be observed in interactional patterns known as initiation-response-evaluation (IRE) (Mehan, 1985), more learner-initiated turns during online discussions were found in written CMC (Chun, 1994; Hudson & Bruckman, 2002; Kern, 1995). For example, Kern (1995) found that the amount of teacher's presence as indicated by analysis of transcription decreased in virtual environments; thus the proportion of the teacher's evaluative moves was lowered. Instead, a more direct and collaborative communication between students was observed, such as students' initiating new topics, addressing questions among peers, and providing feedback to each other (Chun, 1994; Kern, 1995).

From another perspective, Beauvois (1997) examined the beneficial relationship between synchronous written CMC and L2 learners' oral achievement, in which she found a significant difference between the experimental and control groups on three oral exams assigned during the semester.

Many early studies suggest positive effects of written CMC for L2 learning, while they are criticized in terms of limited methodological and theoretical accounts (Ortega, 1997). In contrast, some topics discussed in the early research provided a foundation for the L2 text-based CMC research that is developing today. This includes the shifting role of teachers and students,

collaborative effects among students, benefits of planning time in text-based CMC interaction, and the relationship between written CMC and L2 oral development.

Some researchers examined the similarities and differences in discourse features produced during L2 text-based interactions and those in F2F. Many studies adopted the cognitive interaction framework. For example, there were a number of instances of negotiation of meaning observed during CMC just as those in oral interactions (e.g., Abrams, 2003; Blake, 2000, 2005; Pellettieri, 2000; Toyoda & Harrison, 2002). Pellettieri (2000) observed a labored negotiation of meaning between Spanish L2 learners during task-based online interaction. He also found that task types made a difference in terms of the amount of negotiation moves similar to oral interactions (e.g., Loschky, 1994). In addition, lexical confusion was a most frequent trigger for negotiation work (Pellettieri, 2000; Tudini, 2003, 2007); the result shares similarities with that of F2F interaction. This was also observed to encourage online communications between American and German students (Kötter, 2003). Interestingly, Pellettieri reported that a lack of response also triggered negotiation in an electronic interaction because silence and pauses were thought of as both the interlocutor's misunderstanding and technical problems. A more nonnative speaker (NNS) initiated interaction was observed between Italian native (NSs) and NNSs' interactions (Tudini, 2007). Pellettieri's study found many instances of learners' self-initiated self-repair during online interactions. A lower number of uptakes have been observed in the virtual context among ESL learners than in F2F interactions due to a lack of nonverbal cues (Loewen & Erlam, 2006; Smith, 2004).

Some researchers have examined the discourse features of text-based CMC. Fundamental notions of a conversation in F2F need reconsideration in an online context (Mazur, 2004). Orderly turn-taking, one speaker's talking at a time, and no overlap between turns cannot be

assumed in an online interaction. Rather, violation of sequential coherence is the norm in this setting (Herring, 1999). CMC messages are posted as the system receives them in a strictly chronological order, thus unrelated topics and messages can be juxtaposed and create multidimensional texts (Werry, 1996). Therefore, the participants/learners in electronic interactions are mentally following the logic of the conversation (Negretti, 1999). Negretti believes that the L2 learners face double challenges in electronic communication because not only are they learning the TL, but they are also learning a conversational style specific to the virtual environment. Similarly, CMC relies heavily on literacy skills, which means that there is an additional burden for learners in terms of decoding and encoding meaning (Abrams, 2003).

While L2 learners may experience some challenges, they do accommodate to the virtual environment. For example, unconventional turn-taking, sequential order, and a lack of paralinguistic cues have been adopted by taking new interactional strategies. For instance, basic units of speech such as openings and closings can be found in an online interaction; however, they function slightly differently. The participants/learners overtly show their presence and attempt to be acknowledged by other participants when greeting (Negretti, 1999). Also, the learners take time to greet each other in order to build a sense of online L2 community (Darhower, 2002). In addition, the messages are sent by addressing the conversant's name at the beginning to reduce the communicative ambiguity (Negretti, 1999; Werry, 1996).

Online discourse shows swift topic shifts and fragmentation due to the disruptive turntaking system (e.g., Herring, 1996; Kern, 1995; Negretti, 1999). However, such loose connectivity in CMC between turns/messages might encourage participants' sense of freedom (Herring, 1996). This characteristic might help learners express themselves freely and frankly, improving their creativity and thinking, and encouraging humor (e.g., Bump, 1990; Chun, 1994;
Kern, 1995). On the other hand, it could work negatively when the learner behaves offensively, a phenomenon known as flaming, which was more frequently observed in online than in F2F interactions (Darhower, 2002). Darhower believes that these interactional opportunities will provide learners the opportunity to acquire the pragmatics of the TL.

A more recent approach to internet-based language learning brought a major shift in terms of theoretical approach to research, language learning focus and objective, and language learning opportunity for the learner. In this framework, the intercultural competence has been emphasized, which fosters not only the learner's linguistic ability but also their pragmatic ability and intercultural awareness of their own culture and that of others (Thorne, 2006; Thorne and Payne, 2005). The intercultural communication for foreign language learning (ICFLL) is introduced, which is prompted by internet-based communication tools used to assist communication, collaboration, and social interaction between students who are separated worldwide (Thorne, 2006). Classroom discourse observed in tandem learning has suggested the important role of the teacher as a language/cultural mediator (Bauer, deBenedette, Furstenberg, Levet, & Waryn, 2006; Belz, 2003; Muller-Hartmann, 2000; Thorne, 2006). The teacher's role is multiple and complex in order for learners to achieve an advanced understanding of culture and language, and obtain meaningful experiences in learning, since there is always a potential for misunderstanding and conflict between learners with different backgrounds. The research has suggested the learners' active behaviors in tandem learning; collaboration among teachers, learners, and their language partners. Telecollaboration has shown positive outcomes as well. For example, language socialization was observed in French learners' email communication with their native partners, while learning formal and informal pronouns (e.g., Kinginger, 2000). In addition, Belz and Vyatkina's (2005, 2008) studies examining communications between German

and American students suggested the complex and dynamic nature of language learning process and development, which reflects each individual learner's socio-historically formed agency (also see Darhower, 2007; Hanna & de Noohy, 2003).

Off-screen behaviors around computers

As shown in the above section, L2 learners' online behaviors and activities in the virtual environment have been abundantly documented. Significantly, however, very few researchers to date have looked at the off-screen behaviors and activities engaged by L2 learners in their physical environment while they engage in technologically mediated communication. In two studies of this nature, Smith and Gorsuch (2004) documented video-recording of learners' vocalizing their speech in their off-screen environment while engaging in text-based CMC. Additionally, Payne and Whitney (2002) found most participants using text-based CMC were conscious of their subvocalization during text-chatting. This research suggests that students' off-screen behaviors during online instruction are consequential for learning.

Other studies have looked at the off-screen behaviors and activities engaged by L2 learners in their physical environments while they engage in technologically mediated interactions and/or tasks. For instance, Leahy (2004) and Jeon-Ellis, Debski, and Wigglesworth (2005) examined university-level L2 student's learning behaviors in groups during technologybased tasks. They found that a computer-based project generated collaborative language learning. Similarly, Kitade (2008) studied the role of offline collaborative metalinguistic talk in which learners of Japanese engaged in while they were composing asynchronous CMC texts. The learners enrolled in advanced-low level Japanese courses were paired with their classmates and engaged in decision-making tasks via a bulletin board system with one or two Japanese partners. The text-based interactions and the audio-recorded offline verbal interactions were

collected as data, and were analyzed based on the metalinguistic episodes (Swain and Lapkin, 1995). An individualized posttest was developed according to the identified episodes and given to the participants. The results showed that the online and offline talk played a distinctive role. The learners were able to construct their knowledge through collaborative metalinguistic talk with peers in the offline environment while they focused on the task in the online environment.

A unique approach to data collection was demonstrated by the following studies. In a study done by Smith and Gorsuch (2004), they reported the effective use of a usability lab (UB) to collect English learners' text-based CMC interactions. This system allowed the researchers to audio and video record off-screen behaviors of the learner in the UB while they engaged in CMC. Additionally, the researchers captured the computer screens while learners composed texts. The researchers claimed this data collection method was effective in determining what the learner knows and attends to while text-chatting, as opposed to relying only on chat logs. With a similar methodological approach, Smith (2008) examined self-repair behaviors among 46 beginning learners of German in a task-based CMC environment. He compared the self-repair activities of the same learners working on the same tasks, using two data sources; one was printed chat logs of online interactions and the other was video screen captured file, which recorded all texting behaviors that the learner had engaged in while composing texts on the computer. The analysis of both data sources revealed a clear difference in the amount of selfrepair engaged by the same learners. The learners self-repaired more frequently on their computer before sending the messages to the interlocutor as they edited messages. This result challenges the past research analyzing only printed chat logs. Similarly, Smith (2008) examined the relationship between scrolling, negotiated interaction, and self-initiated self-repair (SISR) while the university students learning German engaged in jigsaw tasks. The screen capture

software file demonstrated the learners' more frequent engagement in grammatical SISR than lexical SISR, and more frequent scrolling was correlated with the reduced amount of online negotiation. The author predicted that the ability to scroll in the synchronous computer-mediated communication (SCMC) environment could substitute the necessary linguistic negotiation. Additionally, using the same data set as Smith (2008), Sauro and Smith (2010) investigated the relationship between the L2 output production of German learners and the planning time during text-based SCMC. The research examined the types of editing that the learner made covertly and overtly in texts during SCMC. The results suggested that the SCMC environment allowed the learner to afford planning time during the interactions.

The studies showed benefits of technology use in language classrooms, and provided ample evidence for an increasing language learning opportunities online/off-screen classroom settings. However, the research focus has been narrowly defined in an "online/virtual" component and/or students' L2 performance in online classrooms. Surprisingly few researchers have looked at students' off-screen learning behaviors and the process of their learning in front of their computes while the learners engage in technological tools.

Theoretical framework

Conversation analysis

In the following section I will review CA in ordinary talk and institutional talk, plus CA applied in the SLA field. My research in chapters 3 and 5 will be guided by aspects of the CA framework.

Conversational analysis (CA) studies the order and organization of social action found in mundane interaction engaged in by members of society (Psathas, 1995). According to Hutchby and Wooffitt (1998), the primary goal of CA is to investigate the organization of social activities

in what Schegloff called *talk-in interaction* (Have, 1999). The interaction is viewed to be created, interpreted, and accomplished by the interactants. CA aims to characterize the interactional organization from the "emic" or participants' perspectives, and to find evidence of intersubjectivity as to how participants oriented to the progress of the interaction during the sequence of actions (Seedhouse, 2004).

According to Have (1999), CA was originated by Harvey Sacks along with his colleagues in the field of sociology in the 1960s. Seedhouse (2004) points out that the major factors that contributed to development of the CA approach include Sacks' encounters with Harold Garfinkel who developed Ethnomethodology (EM), and the newly introduced audio recording technology that allowed researchers to examine naturally occurring conversations. An additional inspiration for developing this new research area may include an influence by direct, F2F interaction order, informed by Erving Goffman (Have, 1999). Sacks' idea that the interaction is "systematically organized and deeply ordered and methodic" was considered radical at the time since the mundane talk was viewed as disorderly and was not an object of study in the era when a Chomskyan linguistics perspective was pervasive (Seedhouse, 2004, p. 2). In terms of a theoretical standpoint, there is a gap between the CA mentality and linguistic mentality vis-à-vis the status of language. As opposed to the interest in examining linguistic units of language produced in talk, the primary interest of CA is the interactional organization and interlocutors' social action and accomplishment.

As mentioned above, EM is one of the major influences on the emergence and development of CA (Have, 1999). EM was developed by Garfinkel whose interest lies in a study of "the methods members use in activities of everyday practical reasoning" (Roulston, 2004, p.140). That is, he wanted to rediscover background expectancies shared and interpretable

among members of the society, yet which frequently come to be unnoticed by members (Garfinkel, 1967). Based on Seedhouse's book (2004), whereas EM had an interest in theorizing the social order and organization that people enacted in everyday activities, CA focused on developing theories of people's interactions where the language is used as a means of communication. In understanding the link between EM and CA, the notions of indexicality and reflexivity are considered to be fundamental principles for both theories. According to Seedhouse, indexicality refers to the notion of "context-boundedness" (p. 7), where the indexical knowledge by the interactants is active and is relied on during talk so that not every aspect of intended meaning needs to be explicitly expressed. Reflexivity means that "the same set of methods or procedures is responsible for both the production of actions/utterances and their interpretation" (p. 11). However, such knowledge is assumed by the members (Garfinkel, 1967). The action is rule-governed where most members belong to the society have learned to behave in an appropriate manner; for example, a recipient of a greeting will return the greeting as a preferred behavior (Heritage, 1984). These norms may be thought of as the tool that allows members to engage in orderly social activities by explicating and interpreting each other's actions. Heritage (2005) describes this process by borrowing Otto Neurath's metaphor, "they are building the ship while already being out on the ocean" (2005, p. 104).

Considering the above principles, CA brings unique features to its analytic framework. According to Have (1999), CA emphasizes an emic perspective, which attempts to explicate human behaviors performed within the context where members' knowledge is displayed as a resource in situated action. The traditional CA approach does not rely on existing concepts about human conduct including external social categories such as gender and social class, nor is it concerned about participants' reflection on reality. Secondly, naturally occurring recorded

conversations are used as data in order to examine conversational contexts that are contingent and locally managed. Transcriptions are highly detailed in order to examine both verbal and nonverbal behaviors (e.g., intonation, gaze, pauses).

In addition, Seedhouse (2004) maintains some key components of CA. First, naturally occurring conversations encompass order at all points where "no order of detail can be dismissed a priori as disorderly, accidental or irrelevant" (p. 14). This reflects Sack's belief that people are viewed as rational actors. Second, contributions to interaction are context-shaped and context-renewing. Third, analysis is bottom-up and data-driven and will not assume any a priori theoretical approach or background details. The fundamental issue in the analysis process is to consider the question, "why that now?" and seek evidence for "what is being done by that" (Schegloff, 2007, p. 2).

According to Sacks, Schegloff, and Jefferson (1974), basic facts about conversations include occurrences of turn-taking by the conversationalists, a tendency for one speaker talking at a time, and a possible minimal gap or overlap between turns. Conversational organizations consist of three fundamental components: turn-taking, turn-sequence, and repair (Hutchby & Wooffitt, 1998).

Turn-taking organization is used for speech exchange system, and has two components: turn-construction and turn allocation. Each turn is constructed by units, a construction that is largely consistent with linguistic categories such as sentences, clauses, phrases, etc. These are called turn construction units (TCU) (Hutchby & Wooffitt, 1998). The TCU is considered for participants' potential for action where they possess two properties. One is that the TCU provides the participant's "projectability" of action about the type of TCU and the manner in which it ends. The other is that the TCU brings possible legitimate transition of speakers at

"transition relevance places." There are two rules for turn allocation at the transition relevance place. Two allocation components include those in which the next turn is allocated by the current speaker's selecting the next speaker and those in which a next turn is allocated by self-selection (Schegloff, 2007). The rule-set provides a context for turn-transfer with minimum gap and overlap between each turn, occurring at transition relevance places. According to the proposed model for the turn-taking organization for talk (Sacks et al. 1974), turn size and turn order are characterized as locally managed, party-administered, interactionally controlled, and sensitive to recipient design. Each turn and/or the course of actions enacted can be reflected upon and pursued by the co-participants to examine actions achieved and will be achieved (Schegloff, 2007).

Another important component of conversations is sequential organization that is "the vehicle for getting some activity accomplished" (Schegloff, 2007, p. 2). Utterances in interactions are sequentially organized frequently by adjacency pairs, that is, a first-pair part and a second-pair part, each uttered by different speakers. In any utterance in a conversation, the speaker's talk at the current turn is created and adjusted based on the turn immediately proceeding, while simultaneously the current turn projects the scope of action for the next turn constructing a context for the following turn. In the next turn of action the co-participant will demonstrate understanding of the prior turn at talk. Thus participants construct mutual understanding of the interaction as the next speaker monitors some constraints for composing relevant utterances projected in the first-pair part appropriate for the following response by "relevance rules" (p. 19). According to Schegloff, most adjacency pairs have alternative types of second pair parts, responses relating to preference organization. Additional characteristics of adjacency pairs include that two pair-parts might have a third position showing the speaker's

acknowledgement or evaluation. The following interaction gives an example (retrieved from a March 6, 2009 archived class):

1.	Teacher	owarimashitaka:?
		Have you finished?
2.		(5.9)
3.	Student 1	hai
		Yes.
4.		(0.4)
5.	Student 2	hai
		Yes.
6.		(0.8)
7.	Teacher	<u>ha</u> ::i
		Good.
	 1. 2. 3. 4. 5. 6. 7. 	 Teacher Student 1 Student 2 Student 2 Teacher

Lastly, repair organization that is not a normal course of action occurs in order to resolve conversational trouble such as misunderstanding (Schegloff, 1992; Schegloff, Jefferson, & Sacks, 1977). Repair may be caused by referential pronoun use, word search, or mishearing caused by noise. A repair sequence begins with a fixable utterance which includes a trouble source. A repair is inserted in an action when the trouble was perceived, but once the problem is resolved the regular conversation resumes. Repair has two components: the repair initiation and outcome. It can be initiated as self-repair or other repair, and repair action can be accomplished by the original speaker or the other speaker. According to Schegloff et al. (1977), a preference for repair work tends to be accomplished by self-initiated self complete.

Institutional talk

While L2 learners' talk can take place in any location, talk occurring in classroom contexts can be treated with considerations of institutional characteristics, which is frequently differentiated from ordinary talk. Ordinary talk is described as the social institution *of* interaction whereas institutional talk is described as the social institution *in* interaction, although the

boundary between two types is unclear (Heritage, 1997, p. 162). Heritage also calls the former type, 'basic CA' and the latter type, 'institutional CA' respectively (2005, p. 104).

The basic CA analysis

specifies the normative structuring and logics of particular courses of social action and their organization into systems through which participants manage turn taking, repair, and other systemic dimensions of interaction's organization. And it examines the routine playing out of that structuring the empirical sequences of action, primarily in terms of the relationship between self and other. It is human competencies in the use of these resources that make social interaction possible. These resources, which are systemically biased in favor of affiliation and social solidarity, are the foundation of human sociality. They are relatively enduring and slow to change (Heritage, 2005, p. 104).

In contrast, institutional CA is an application of basic CA as a baseline in order to comprehend the work of social institutions. The findings in the institutional settings "are historically contingent and subject to processes of social change under the impact of culture, social ideology, power, economic forces, intellectual innovation, and other factors impacting change in society" (Heritage, 2005, p. 105).

Heritage (1997) develops three main features of institutional talk based on Drew and Heritage (1992):

1.	Institutional interaction normally involves the participants in specific goal
	orientations which are tied to their institution relevant identities: doctor and
	patient, and teacher and pupil, and so on.
2.	Institutional interaction involves special constraints on what will be treated as
	allowable contributions to the business at hand.
3.	Institutional talk is associated with inferential frameworks and procedures that
	are particular to specific institutional contexts (pp. 163-4)

Psathas (1995) maintains that research investigating institutional talk may consider how social settings shape and/or constrain interactional phenomena, and/or how the institutional context is organized. One of the difficulties that researchers may face to analyze institutional talk

is to determine the effect of macro- versus micro-social structure in interaction that participants orient to, and "how not to reify social structure" (p. 54).

In addition, Heritage identifies six basic characteristics of institutional talk to consider.

- 1. Turn-taking organization
- 2. Overall structural organization of the interaction
- 3. Sequence organization
- 4. Turn design
- 5. Lexical choice
- 6. Epistemological and other forms of asymmetry (p. 164)

Since turn-taking organization is most relevant to my data, I will summarize Heritage's (1997, 2005) description of turn-taking organization as an example. One of the most fundamental aspects of institutional talk is the use of special turn-taking organization. This is because turntaking organization is a shared property of any interaction regardless of settings (Sacks et al., 1974) whereas it has a potential for changing the action opportunity for the interaction participant. Some forms of institutional talk are predetermined in terms of topics introduced, types of contributions the participant makes, and order of speakership, which involves the special turn-taking organization. This entails the procedure where individuals' contributions and/or speakership may be restricted: for instance, in social settings such as institutional interaction in courts (Atkinson and Drew, 1979), news interviews (Greatbatch, 1988; Heritage, 2002; Heritage and Greatbatch, 1991), and classrooms (e.g., MacBeth, 2004; McHoul, 1978, 1990; Mehan, 1985). In such settings, special turn-taking organization involving explicit sanctions is appropriated as a norm. The common trait that contributes to the presence of special turn-taking organization and the above social settings is that it tends to occur in large-scale formal environments having large numbers of potential speakers and hearers. Three groups of special turn-taking organization are categorized: 1. turn-type preallocation; 2. mediated turn allocation procedures; and 3. systems that involve a combination of both processes. The typical format of

the first type can be seen in classrooms and in courtrooms where the interaction involves the restriction of one interactant, frequently a lay person, answering a question, and an institutional representative asking a question. For the second type there are fewer restrictions in terms of the content and type of contributions one is allowed to make. However, the mediator is the one who manages to allocate the next turn at the end. Heritage (2005) states that "the effect of these constraints is that the institutional representative is understood to be the elicitor of responses, but not the addressee of those responses that are, instead, understood to be targeted at the nonaddressed [...] audience" (p. 116-117).

Conversation analysis in the second language acquisition context

Traditionally research in classroom discourse views interactions as a crucial component of second/foreign language learning. CA is one approach that has been used to investigate such language learners' talk-in-interaction. In recent years an increasing number of multilingual interactions inside and outside of language classrooms have emerged with the application of CA methodology to research (Schegloff et al., 2002).

Studies in L2 classroom discourse have been developed by assessing the results with those found in L1 classroom discourse (e.g., Cazden, 1988; Mehan, 1985; MacBeth, 2004; McHoul, 1990) and ordinary talk by native speakers of English (e.g., Schegloff et al., 1974). For instance, instructional sequences such as response-initiation-feedback/evaluation (IRF/IRE) (Mehan, 1985; Sinclair & Coulthard, 1975) have initially investigated children in L1 US classrooms. Studies in the L2 classrooms also observed IRF/E sequences, which seemed like commonly used techniques by teachers across the instructional contexts regardless of educational levels (elementary, high-school, university, etc.), subject matters (geography, physics, foreign/second/heritage language, etc.), and language learning context (immersion, ESL, etc.)

(e.g., He, 2004; Hellermann, 2003). Teachers' repair/correction/third-turn position is one of the most widely explored topics in the L2 classroom discourse (e.g., Hall, 2007a; Hellermann, 2003, 2009; Kasper, 1985, 2004, 2009; Lee, 2007; Markee, 2000; Seedhouse, 2004).

CA researchers' contribution to the SLA field has become more prominent particularly since the release of Firth and Wagner's publication in 1997 (Mori & Markee, 2009). This paper critiqued mainstream SLA research (i.e., cognitive interaction perspective), suggesting that this approach overlooks the social dimension of language development. Firth and Wagner's (1997, 2007) argument contrasts the theoretical belief that language learning is viewed to be either an activity of an individual that occurs in one's mind with the view that language learning is a social and cultural phenomenon that occurs in socially conjoint interactions. Firth and Wagner (1997) argued for a reconceptualization of SLA primarily on three issues in order to theoretically and methodologically balance the field. These issues include the following guidelines for SLA researchers: 1. to become more aware of the contextual and interactional aspects of the language in use; 2. to develop an emic (i.e., participant-relevant) perspective to the issue; and 3. to broaden the SLA database by expanding the language acquisition contexts beyond language classrooms such as the workplace (p. 286). The second point was further elaborated upon, with the authors expressing disconformities categorizing research participants such as a dichotomous "native/nonnative speaker" classification. This assumes group homogeneity with only one identity, and ignores individual agency. Also, the categories represent negative stereotypes such as that "native speakers" are ideal speakers of the TL while "nonnative speakers" are deficient communicators whose L2 competence is underdeveloped (also see Markee, 2000).

With the theoretical and methodological features that are contrastive to those in the mainstream SLA, CA research has been added to the field by reanalyzing the language learners'

interactions with different foci from those with the mainstream SLA method. This analysis is approached from an emic perspective with the use of the methodological tools such as turntaking, sequence organization, and repair. Interactions are viewed as social and collaborative activities regardless of the interactants' linguistic status where learners' identities intermingle with and are shaped by external factors yet they are sensitive to the local context (Mori, 2007). Some studies focused on language learners' (nonnative speakers') interactions with native speakers (e.g., Gardner, 2004; Hosoda, 2000, 2006; Kasper, 2004, Kasper and Kim, 2007; Nakamura, 2008; Wong, 2000, 2004, 2005) and with other nonnative speakers outside of classroom contexts in ordinary conversations (Carroll, 2000, 2004). In addition, researchers investigated talk-in-interaction that occurs in workplace settings (e.g., Brouwer, 2004; Brouwer, Rasmussen, & Wagner, 2004; Kurhila, 2004, 2005) between the nonnative speaker and the TL speaker, and among nonnative speakers of the TL as a *lingua franca* (e.g., Mondada, 2004; Firth, 2009). Mori and Markee (2009) state that some researchers' approach to L2 learners' discourse is to view language learning process as "doing being an L2 learner" (e.g., Mori, 2004, Mori and Hasegawa, 2009) while for other researchers, the approach is "not doing being an L2 learner" (e.g., Firth, 2009). Some researchers approached study of L2 learning by using video-recording, which allowed examination of additional interactional behaviors such as gaze and gesture besides speech exchanges (e.g., Carroll, 2004; Olsher, 2004). The visual clues provided in context are an important aspect of communication which functions with verbal behaviors (Goodwin, 1979; Goodwin and Goodwin, 1986).

In terms of L2 classroom interactions, Hall (2004) describes CA contributions to understanding L2 classroom discourse. For instance, microanalysis allowed us to see the variability and complexity of classroom practices, and observations of behavior-based actions

showed the dynamic and locally situated nature of task construction. Detailed examinations of classroom interactions and practices raised an awareness of the interactional organization procedure in both educational and non-educational settings. Some studies examined classroom discourse by looking at interactions in a teacher-fronted classroom while others focused on student-student interactions. Repair/correction moves particularly issued by the instructor to the learner have been frequently investigated (e.g., Kasper, 1985; MacBeth, 2004; Markee, 2000; Seedhouse, 2004). However, the distinction between repair for resolving interactional trouble and correction for providing feedback to a language error is unclear. Hall (2007a, 2007b) points out the ambiguity in some CA researchers' usage of terminologies that require accuracy according to each theoretical orientation (i.e., CA versus cognitive interaction versus discourse analysis), while Seedhouse (2007) maintains that the differences in the use of terminology lie in linguistic versus ethnomethodological approached CAs. In contrast to research done in the area of other -initiated repairs in L2 classrooms, self-initiated self-repair is understudied (e.g., Hellermann, 2009; Kasper, 2009).

In contrast, some weaknesses of the CA framework have been pointed out. For instance, the primary weakness is that CA is unable to account for the language learner's "acquisition" or cognitive process of linguistic development in a short and in a longitudinal manner while it can describe language "use" (Gass, 1998, 2004; Hall, 2004; Kasper, 1997; Larsen-Freeman, 2004; Long, 1997). He's (2004) study has shown the suitability of the CA approach to describe language use. For instance, he illustrated that classroom interactions are socially constructed by participants' orientation to practices through institutional talk. However, he concluded CA is not suited to explain the effectiveness of classroom interactions in terms of cognitive change of individual learners.

Although theoretical and methodological limitations have been acknowledged (e.g., Kasper, 1997; Markee and Kasper, 2004), challenges seem to have generated a new research agenda, namely, to demonstrate acquisition / language development change over time. In other words, the fundamental question lies in the role of cognition and learning (Kasper, 2009).

Some researchers approached the issue by using a "CA-inspired approach to SLA" whereas others employed a "CA-informed approach to SLA" (Mori and Markee, 2009, p. 2). Mori and Markee (2009) describe the former approach as a tendency to "flavor a relatively purist or CA-native approach to the analysis of learning talk" (p. 2). On the other hand, the latter is described as a tendency to "use CA as a technical tool that provides the methodological muscle for a priori theories of SLA" (p. 2).

An example of the former approach would be Markee's (2008) study, which examined the interactions between science teachers from the People's Republic of China who were attendees of a professional development program at a US university, and their instructor at this institution. Specifically, the author analyzed audio and video recordings of the participants' interactions focusing on one learner's use of a single word in a two-day period by using a longitudinal learning behavior tracking (LBT) methodology. Markee described the learner's socially distributed cognition to achieve language development, and the study also demonstrated a possible use of the LBT methods for SLA. Similarly, Markee and Seo (2009) developed a concept of learning talk analysis (LTA), described as "observable socially distributed interactional practices" (p. 37). A close examination of interaction between ESL tutor and tutee showed development of LTA in the short term; yet evidence for longitudinal acquisition was not demonstrated in either study.

Mori and Hasegawa (2009) investigated how learners' manage and organize their interaction during pair activities in Japanese in a foreign language classroom as they engage in the action of word searches. They approached the data by looking at embodied cognition, which can trace how learners' cognitive states might be displayed in interactions via talk and other behavior such as gaze, posture, and the use of textbook and notebook. Additionally, there would be mutual influence between the displays of the cognitive states and the way the interactions are organized during peer talk. The study demonstrated a range of affordances during the interaction. It also showed the students' shared knowledge and past experiences as classmates played a key role in organizing the interaction.

These researchers argue that cognition is socially shared in interaction (Kasper, 2009; Schegloff, 1991). In contrast, researchers who take the CA-informed approach to SLA view language learning as change in participation (e.g., Hellermann, 2008, 2009; Young and Miller, 2004). Additionally, language learning has been explicated by bringing in additional theories besides CA, such as situated learning (Lave, 1993; Lave and Wenger, 1991) and Vygotsky's (1978) sociocultural approach (Mondada and Pekarek Doehler, 2004).

For instance, Young and Miller (2004) investigated how an adult Vietnamese learner of English acquires unfamiliar discursive practices through weekly ESL tutoring writing conferences. This study used two theoretical frameworks: interactional competence framework and situated learning. Discursive practice is defined as "recurring episodes of F2F interaction, episodes that have social and cultural significance for a community of speakers" in which "participants co-construct a discursive practice through a configuration of interactional resources that is specific to the practice" (p. 519). In this framework, social realities are viewed as interactionally constructed. The study showed that students' participation changed considerably

from peripheral to fuller participation over the sessions; the tutor also became a co-learner to a certain extent. The research showed that language learning can be viewed as a situated practice with the roles of learner and tutor as co-constructed.

Hellermann (2009) examined potentially delicate social action, negative dispreferred responses to previous turns and course of action by focusing on one adult ESL student's talk during classroom interactions with her peers over five 10-week terms. Similar to other CA researchers, he suggested that language learning is a "situated, co-constructed, and contingent social phenomenon" (p. 119). Depending on the focus of the lesson, the student changed her orientation appropriately toward language learning or interpersonal communication with her classmates. The interactions showed "ways that members of the language learning classroom engage in a particular social action that is representative of two overlapping communities of practice: the classroom and that of 'English language users'" (p. 120).

CA has been applied extensively in the context of L2 acquisition in recent years. Whereas the majority of SLA studies have been inspired by cognitive science, taking a quantitative approach to data analysis, CA researchers have placed on an emphasis of another perspective of L2 learning. They approach to SLA by 1. focusing on emic perspective which views language learner as an active conversational participant who possesses interactional resources, 2. viewing language learning as a social phenomenon where cognition is available through social interactions, and 3. accounting for a qualitative phenomenon of language learning process and use. In this dissertation, my studies will be guided by the above perspective to examine the classroom/institutional talk engaged by the participants in the online/off-screen environments.

The ecological and semiotic perspective to language and language learning

In the following section I will review the ecological and semiotic perspective to language and language learning developed by multiple researchers. This will provide the background on the theoretical approach employed in chapter 4. Particularly, I closely align with the analogous approaches taken by Kramsch (2002) and van Lier (2000, 2002, 2004).

According to Kramsch (2002), the ecology metaphor appeared in the 1960s in the various disciplines, which include systems theory and cybernetics (Bateson, 1972, 1979), psychology (Gibson, 1979), educational development (Bronfenbrenner, 1979), and linguistics (Haugen, 1972). In recent years, these views have influenced the intention of a few researchers in the field of language acquisition to explore a new metaphor, "the dynamic parts of a living organism" (p. 3), which examines the complex relationship between learners (living organisms) and their physical and social environments. The metaphor has emerged in response to the necessity of accounting for diverse and conflicting language acquisition phenomena that are produced today's environment of globalization and multilingualism, where the oppositional perspectives, either on linguistic or social structures of language development, cannot account for the language acquisition that we observe. This includes the recent introduction of new language learning contexts, such as multimodal and computer-mediated settings (e.g., Lam & Kramsch, 2003; van Lier, 2003).

The ecological perspective is not considered to be a unitary theoretical approach (Kramsch, 2002; van Lier, 2004); its primary principles are differentiation, diversity, and adaptability, and it considers language development as a complex, nonlinear system (Kramsch, 2002). What unifies this approach is its emphasis on the view of context as socially situated,

which researchers in cognitive science tend to take for granted (Bateson, 1972, 1979; Bronfenbrenner, 1979; Haugen, 1972).

The context in ecological research is viewed as an evolving process where learners actively interact with the social environment not only through verbal means, but also with nonverbal resources and artifacts in the surrounding environment (van Lier, 2000, 2002, 2004). The context becomes consequential only when relevant meanings are attached via given actions and language (Bateson, 1979). Unlike the premise that language acquisition occurs primarily in an individual's mind (e.g., Gregg, 1993), the premise of the ecological context is that learners' experiences in the social world influence the development of their cognitive processes (Leather & van Dam, 2003). The learners' activities are considered to be simultaneously socially constructed and dynamically negotiated in the local context. In addition, according to a phenomenological stance that inspires ecological perspectives (Kramsch, 2002), our knowledge is constructed through a corporeal schema, which enables us to interact with and relate to the world. Moreover, knowledge cannot be dissociated from social and contextual influences because the potential knower defines the relevance of any given phenomenon.

Therefore, this perspective takes a holistic approach to language. That is, language is considered not only in relation to natural surroundings, but also as it relates to "the personal, situational, cultural, and societal factors that collectively shape the production and evolution of language, ontologically as well as phylogenetically" (Kramsch & Steffensen, 2008, p. 18). The holism is characterized by a dialogic perspective on language in a Bakhtinian sense where dialogue is viewed as a "relational principle not only of here-and-now interactions but of human existence per se" (Kramsch & Steffensen, 2008, p. 19).

Using semiotics, van Lier described one of the most important concepts in ecological studies, the mediation process through which language learners interact with their environment, as "the study of sign-making and sign-using practices" (van Lier, 2004, p. 56), a theory developed by Peirce (1998). The important part of Peirce's semiotic system is its three components: Firstness (just what it is with no reference to anything else), Secondness (reaction, relation, change, experience), and Thirdness (mediation, habit, interpretation, communication, and other factors.) (van Lier, 2004, p. 61). This triadic relationship is composed of dynamic routes that constantly and endlessly change and develop through interpretive processes.

According to van Lier (2004), in a language learning context signs are viewed as the relationship of relevance between learners and the world, which comprises physical, social, and cultural facets. Signs are viewed as mediated affordances that begin in a dialogic interaction between learners and the environment. It is in the environment, encompassing symbolic opportunities for potential meanings, where learners engage in meaning-making activities. Learners are regarded as autonomous entities who possess the authorship of their own actions and speech in to the context that is influenced by their emotions. Autonomy is viewed a social production while, at the same time, it is created and owned by the learners themselves.

Mediation is an open process that offers learners numerous language acquisition possibilities; through mediation, learners are not mere recipients of the knowledge being transmitted. The key notion in the process is "affordances," a term coined by Gibson (1979). He states that affordances are "what [the environment] offers the animal, what it provides or furnishes, either for good or ill" (p. 127), and "they are relationships of possibility, the result of perceiving an object while co-perceiving oneself" (van Lier, 2004, p. 105). Therefore, affordances can only be perceived, related to, noticed, and utilized by learners themselves. Yet,

learners' engagement in the processes is "constantly under revision, adjusted and readjusted" (Kramsch, 2002, p. 11). In this sense the process and the direction that learners take during language learning cannot always be predicated or controlled.

The ecological and semiotic approaches view language and language learning as a process of emergence, where learners actively engage in meaning-making activities in the social world. The affordance may emerge in this process as a consequence of their interactions with the physical environment, mediated via symbolic tools.

The ecological and semiotic models are the most suitable approach to analysis of the data on students' off-screen behaviors in a virtual classroom mediated by audio-conferencing software because they "[open] up possibilities of embracing the paradoxes, contradictions, and conflicts inherent in any situation involving semiotic activity" (Kramsch, 2002, p. 23). In chapter 5 I align my theoretical perspective with Kramsch (2002), that the objective of ecological research on language development is to identify and describe the affordances that emerge from these paradoxes in the multimodal setting.

SLA Cognitive Interactionist approach

Finally, I describe the cognitive interaction framework which guided my research presented in chapter 5, where I examine students' initiated correction behaviors. While I do not use this theoretical approach to analyze my data, the theory guides my study since it has extensively investigated the role of correction in second language interactions. I first describe the theoretical background of the cognitive interaction framework. Secondly, I will discuss how corrective feedback has been studied in the approach. Thirdly, I will discuss the theoretical and methodological strengths and weaknesses of the framework.

Corrective (negative) feedback has been paid much attention in the field of SLA since the 1970s (the terms "corrective feedback" and "negative feedback" are used interchangeably although the speaker's corrective intention is unknown). The cognitive interaction framework has been used frequently for the investigation of negative feedback. Many of the studies examining corrective feedback are based on the Interaction Hypothesis (IH) proposed by Long (1996). There are two concepts that inspired the IH. One is Krashen's (1985) comprehensible input (i + 1), which views that input is considered to be necessary for L2 acquisition process, and in order for input to be effective, it has to be at slightly above the learner's current level. Another notion is the importance of conversation for development of grammar (e.g. Mackey, 1999). According to Long, IH proposes that "environmental contributions to acquisition are mediated by selective attention and the learner's developing L2 processing capacity, and that these resources are brought together most usefully, although not exclusively, during negotiation for meaning" (p. 414). Negotiation of meaning is thought to be triggered by communication problems between the learner and his/her interlocutor during communicative interactions. There are multiple negotiation moves identified, including clarification requests, confirmation checks, and repetition. Negotiation of meaning is an opportunity when the interlocutor makes conversational adjustments, thus the learners receive modified input, which improves comprehension. Therefore, such negotiation work will eventually resolve and repair the communication. Many cognitive interactionists believe that negative input provided during negotiated interaction plays a crucial role in a L2 acquisition process because it has potential to destabilize the learner's current interlanguage level (IL) (e.g., Gass, 1997). They view negative evidence as important in that it informs learners' nontarget-like utterance. On the other hand, positive evidence alone is considered insufficient for L2 learning. In addition, negative feedback

provided during meaning-based communication will provide an opportunity for the learner to attend to form and notice the mismatch between the TL form and the IL form (Schmidt & Frota, 1986). Moreover, the learners' spoken output (Swain, 1985) encourages the learners to focus on syntactic restructuring and testing out their linguistic hypotheses (Gass, 1997; Swain, 1995). This, in turn, further elicits the interlocutor's additional negative feedback.

On the one hand, some SLA researchers see a minimal role for positive and negative feedback in second language acquisition, and/or believe that there is not enough evidence to be convinced of the role of negative feedback in L2 learning. On the other hand, cognitive interaction researchers mostly believe that the beneficial role of negative feedback in second language acquisition (e.g., Gass, 1997; Long, 1996; Lyster, 2007; Lyster & Ranta, 1997; Ortega, 2009).

Early studies in the cognitive interaction framework focused on examining the relationship between interaction (including input and negative feedback) and L2 development (e.g., grammar development, improved comprehension, and vocabulary retention) (e.g., Gass & Varonis, 1994; Loschky, 1994; Mackey, 1999). Generally, they showed positive effects between the two. Mediating factors between input and intake as to what aspects will promote or inhibit language acquisition were examined. Some factors identified include task types, (e.g., Loschky, 1994), gender (Pica, Holliday, Lewis, Berducci, & Newman, 1992), prior knowledge, status, familiarity, saliency and redundancy of the target form (Gass, 1997). In the recent studies corrective feedback has been frequently examined in both laboratory and classroom settings. Focuses of the investigation include frequency of corrective feedback, manner, effectiveness, and the learner's response to feedback (Ortega, 2009).

In terms of frequency of feedback provided, some studies showed that little corrective feedback has been observed during interactions between native speakers (NS) and nonnative speakers (NNS). For example, in Iwashita's (2003) study examining positive and negative evidence in Japanese NNS-NS task-based interaction, she found that approximately 50% of the learner's non-target-like utterances were ignored by NSs. This is considered to be due to the interactional setting where the amount of error correction can differ by the interlocutor's role. This changes the amount of feedback provided. Thus, generally a higher amount of correction is observed in classroom settings rather than in laboratory settings, in which language is viewed as an object for learning as opposed to a tool for communication. Additionally, among the instructional settings, it has been reported that a language focus might contribute to the proportion of error correction. For example, a lower negative feedback has been documented in immersion contexts where language learning is content and meaning-based; thus teachers pay less attention to form (e.g., Lyster & Mori, 2006). On the other hand, in the English as a second/foreign language (ESL, EFL, respectively) contexts where language learning focuses much on form teaching/learning, a higher frequency of error correction has been observed (e.g., Loewen & Philp, 2006; Sheen, 2004, 2006).

In terms of manner of negative feedback, several types have been identified, such as explicit correction, metalinguistic feedback, clarification requests, and recasts (e.g., Lyster & Ranta, 1997). Among those types, recasts are considered to be the most frequently used feedback type regardless of instructional contexts (Lyster, 2007), and it has been often compared over other types (e.g., models, prompts). Ellis and Sheen (2006) believe that there are theoretical reasons for the cognitive interactionists' interest in recasts. One is that there are different views in terms of the role of positive and negative feedback (i.e., generative position versus skill-

building oriented). Examining recasts as negative feedback will provide them an opportunity to test out their opposing theories. Another reason is to determine the impact and effectiveness of implicit and/or explicit types of negative feedback that can contribute to development of implicit/explicit knowledge. According to Ellis and Sheen (2006), researchers such as Long (2007) advocate recasts as corrective feedback because of the implicit and incidental nature of the feedback. By juxtaposing the two forms in input, correct and incorrect ones, the learner's semantic aspect of cognitive load will be freed up, which allows room for processing syntactic aspect (VanPatten, 1998). This is the perfect condition for second language acquisition to occur because the learner can pay attention to the form without being interrupted by (explicit) feedback; thus there is no disruption of flow of conversation. On the other hand, other researchers (e.g., Ellis & Sheen, 2006; Swain, 1985) argue that explicit means of feedback can be beneficial because it can raise the learner's metalinguistic awareness directly or indirectly. Also, they are concerned that implicit feedback might not be noticed by the learner as it was intended. In fact, ambiguity of the role of recasts as corrective feedback has been suggested by Lyster (1998). In his study with French immersion classes, negative feedback and positive feedback actually took exactly the same form where corrective feedback was provided by teachers with their sign of approval and appraisal.

In contrast to Long's argument mentioned above, some studies that have investigated the effectiveness of recasts over prompts have favored prompts rather than recasts (Ammar & Spada, 2006; Lyster, 1998; Lyster & Ranta, 1997; Panova & Lyster, 2002). The majority of the research was conducted in a French immersion context. Lyster (2007) states that prompts are more beneficial for the learner because they encourage the learner to self-generate the form and to push their output. In contrast, implicit recasts and explicit corrections do not provide the

learner an equal benefit because the correct forms will be provided to the learner without negotiation of form. He also believes that an instructional strategy, the learners' choral repetition after feedback, found in a Japanese immersion classroom (Lyster & Mori, 2006) is an overemphasis on forms, which creates attentional bias.

Traditionally recasts have been considered implicit by cognitive interaction researchers; however, Sheen (2004, 2006) asserts that recasts can function explicitly and didactically as opposed to conversationally. Sheen's (2006) examination of the detailed characteristics of recasts (e.g., mode, length, change of intonation) showed that when a single feature was highlighted, saliency of the form increased, which led to the learner's higher uptake (also Loewen & Philp, 2006; Nicholas et al., 2001). Generally, it has been suggested that more explicit means of correction has led to a larger linguistic gain than implicit feedback (Norris & Ortega, 2000).

As for the learner's acknowledging recast and its corrective function, Lyster (2007) identified a few factors that might contribute to the learner's noticing. The factors include the learner's proficiency level (Ammar & Spada, 2006; Iwashita, 2003; Mackey & Philp, 1998; Williams, 2001), the types of errors (Lyster, 1998; Mackey et al., 2001), addition of intonational stress (Loewen & Philp, 2006; Nicholas, Lightbown, & Spada, 2001), the research settings (e.g., Mackey, 1999), the target structures (e.g., Long, Inagaki, & Ortega, 1998), and the lesson content (e.g., Oliver & Mackey, 2003; William, 2001).

Considering some factors that influence the learner's noticing feedback and various conflicting results found in corrective feedback research, for future research Ortega (2009) suggests that instead of using "types," the possibility of using shared characteristics/qualities of feedback across the types, such as explicitness (Ellis & Sheen, 2006), demands, and informativeness.

In terms of the learner's response to the feedback, the term "uptake" has been used widely in the cognitive interaction research. According to Lyster (2007), the notion originates in speech act theory and is comprised of the learner's utterances that are repaired and that need repair. It only refers to the response immediately after the feedback occurred in a single move, unlike the concept used in CA. Although uptake has been used frequently to measure the learners' noticing of feedback by many researchers (e.g., Lyster), it has been problematized by others (e.g., Long, 2007). For example, it can be misleading if it equates with "acquisition" (Long, 2007). Also, some studies found learners' delayed effects even though they did not respond to corrective feedback immediately after it was provided (Gass & Varonis, 1994; Loewen & Philp, 2006; Mackey, 1999; Mackey and Philp, 1998).

One of the many strengths of cognitive interaction studies is their ability to show the empirical evidence, a causal link, between interactional effects (including feedback) and L2 development (primarily grammar and vocabulary acquisition). Also, some mediating factors that contribute to second language acquisition, what promotes or inhibits language learning from psycholinguistic aspects, have been identified. More recently, metaanalysis has shown a facilitative role of interaction (Ortega, 2009). Much of the research is indebted to descriptive and experimental research design (some adopting pre- and posttests design), which are accompanied by complex statistical analysis and quantitative methodology. A larger number of participants have frequently been involved in research in order to represent the sample population; thus the larger sample allowed generalizability and application to a larger population. In addition, corrective feedback studies have revealed insightful knowledge about the role and characteristics of corrective feedback and negative input in terms of theoretical and pedagogical aspects. A

research tool, such as retrospective interviews with learners, provided great understandings of the learner's perceptions during interactions and language acquisition process.

Any approach has its own strengths and weaknesses; the cognitive interaction framework is no exception. One of the weaknesses is a lack of social and sociocognitive accounts for second language acquisition (Ellis & Sheen, 2006). For example, Firth and Wagner (1997, 2007) believe that language learning consists of socially situated practices that occur during the interactions when the language is in use; thus, the social context of the language is not separable from language acquisition. Some researchers (e.g., Firth & Wagner, 1997, 2007; Markee, 2000; Markee & Kasper, 2004; Mori, 2007) argue that an emic perspective to research is often disregarded in the cognitive interaction approach. Therefore, the interactionist researchers tend to analyze data from their predetermined interest and focus. Another drawback is a narrowly focused SLA database. Harklau (2002) points out a lack of investigation of the written mode in classroom-based SLA studies, while traditionally such research assumes the adult learners' F2F oral interaction as a source of investigation. In addition, Bigelow, delMas, Hansen, & Tarone (2006) and Tarone and Bigleow (2005) state that incorporation of the learners' literacy skills will deepen understandings of second language acquisition research. Further, research sites can be expanded to non-academic locations such as a work place where language is actually in use by L2 speakers (Firth & Wagner, 2007). Some disconformities have been expressed in terms of negative connotations placed on nonnative speakers and their language learning. For example, Firth and Wagner (1997) state that the notions "NNSs" and "NSs" are monolithic and fixed, terms that ignore the individual's multiple identities and agency. Also, the categories represent stereotypical roles such that "NSs" are ideal speakers of the TL while "NSSs" are deficient communicators who have underdeveloped TL competence. In fact,

such negativity is implied in the concept of negotiation of meaning where it is the learners' communication problems that trigger the negotiated interaction (Foster and Ohta, 2005). Foster and Ohta found few instances of negotiation of meaning in English as a second/foreign language classrooms, where they observed friendly and supportive exchanges among the peers. Furthermore, individual variations in SLA need consideration; Swain and Lapkin's (1995) study examining the learner's language-related episodes showed that there was great variability among individual learners in terms of their task performance.

In terms of methodology, research contexts with corrective feedback may present an issue. For instance, Markee (2000) states speech produced in a laboratory setting is different than ordinary talk because of intensive and deliberate provision of feedback, which cannot be applicable to other settings. Ohta's (2000, 2001) study investigating the learner's private speech data indicated that the learners are mentally active when provision of recasts were not directed to themselves. In this perspective, "uptake" is problematic because the learners can be active regardless of presence or absence of immediate response to feedback.

Cognitive interactionists have extensively investigated the role of corrective feedback during L2 interactions. Their research examined both theoretical and pedagogical implications, which focused on the individual's mind and language acquisition while sociocultural aspects of L2 learning have been extensively considered.

In this chapter I provided a literature review and describe the theoretical frameworks which guided the research. The use of appropriate technologies have been shown to offer potential benefits to the L2/FL learners in regards to second language acquisition. Particularly, technological tools have allowed the learners an opportunity to engage in the TL and the community regardless of the geographical locations. While the studies have focused much on the

learners' "online/in-class" environment during computer-based tasks, few studies have looked at the learners' "off-screen/physical" environment which I assert plays an important role in the L2 learning behavior and process.

CA has been applied extensively in the context of L2 acquisition in recent years. CA researchers have placed an emphasis on an emic perspective which views language learners as active conversational participants who possess interactional resources. They view language learning as a social phenomenon where cognition is available through social interactions.

The ecological and semiotic perspective views language and language learning as a process of emergence where learners actively engage in meaning-making activities in the social world. In this approach, learners' physical and social contexts are viewed the central matter of language and language learning.

The above theoretical approaches are different than the interactionist approach to SLA which is inspired by cognitive science, and takes a quantitative approach to data analysis. Linguistic acquisition in terms of grammatical usage has been extensively studied in this framework for theoretical and pedagogical purposes.

In the following section I will describe the study methods.

Methods

In the section below I describe the study methods in terms of participants, procedure, data collection, and analysis.

Site and participants

Participants in the study included nine students who enrolled in the online Elementary Japanese 1 course at GA Tech in Spring 2009. The course was conducted in virtual classrooms using audio-based conferencing software, *Wimba* (Appendix A). Three of the students - Mei, Soo

Yun, and Josh (pseudonym) - agreed to film their off-screen behaviors in their physical environments during the class period. Of those two participants, Soo Yun and Mei were verbally more active in their off-screen environment than Josh. I taught the course, simultaneously acting as a participant observer. Data of eight additional students, including two focal students, who enrolled in another section of online Elementary Japanese 1 were also collected at the same time; however, they were not analyzed actively.

Data collection

I collected two types of video recordings as primary data sources: the archived online classes (approximately 27 hours) and films of focal students' off-screen behaviors during virtual class over a semester (a total of approximately 60 hours, 20 hours each). In order to create appropriate file formats that are compatible with *Adobe Premier Pro CS4*, the archived online classes were re-recorded using screen capturing software, *Camtasia Studio*, and the DVD files were burnt to digital formats, using the video converter software called *Need4*. These converted files were synchronized using *Adobe Premier Pro CS 4*, which allowed me to view online class sessions and focal students' off-screen behaviors simultaneously while listening to online and off-screen speeches (Appendix B). Other data included essay assignments, surveys, interviews, field notes/observation, a journal, course syllabus, lesson plans, learning materials, and the course-website.

Procedure

I began recording online classes the first week of the semester, using a *Wimba* archival tool that is a built-in feature of the software. On the third week I made an announcement of the study via email, and all students approved of its conduct. Three students further agreed to participate as focal students and signed consent forms. I met them individually on campus and

provided them with a camcorder, recording disks, and recording instructions (Appendix C). By the fifth week they were ready to film their off-screen behaviors. The duration of student filming was between 60 and 80 minutes for each class over a period of approximately 10 weeks.

Analysis

Verbal and nonverbal behaviors observed in the video data were transcribed and analyzed through multiple theoretical and methodological lenses (Appendix D). These activities included CA (e.g., Heritage, 2005; Sacks et al., 1974) and an ecological and semiotic perspective of language learning (e.g., Kramsch, 2002; van Lier, 2000, 2002, 2004). Initially I took notes while viewing each student's video recordings. I developed rough transcriptions of all online archived classroom discourse and the focal students' off-screen behaviors. Then I analyzed the data based on the rough transcription and selected sample data. As I repeatedly watched the video, I developed more detailed transcription of the sample data and continued to analyze it according to each study purpose. I used other data sources as necessary such as the field/observation notes, a journal, interview, survey, students' essays, and additional archival data.

Detailed transcription was developed based on the Jeffersonian transcription convention (Schegloff, 2007) (Appendix E). However, due to unique qualities of the synchronized data excerpts, I have developed transcripts which consist of two columns in order to capture simultaneous actions engaged by both online and off-screen participants. The actions presented in the same row in different columns show that the activities took place at the same time. The left side of the column describes online classroom interactions and the right side of the column shows the focal student's off-screen verbal and nonverbal behavior in their physical environment. English translations of the Japanese utterances are given in italics.

In the next three chapters I argue that the learners' physical environment played an important role in their online language learning, a research setting that has often been overlooked in the previous online course studies. I will present my research that exemplifies how the students' physical environment provided rich information about their language learning engagements and created unique learning affordances.

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CHAPTER 3

INTERACTIONAL NORMS DEVELOPED THROUGH A STUDENT'S OFF-SCREEN BEHAVIOR DURING SYNCHRONOUS ONLINE INSTRUCTION¹

¹ Satomi Suzuki, et al. To be submitted to *CALICO Journal*.

Abstract

Interactional norms in both face-to-face (F2F) and online environments have been extensively researched in the context of second language (L2) learning. However, the role of the learners' physical environment and the off-screen behaviors that students engage in during a synchronous online instruction are virtually unknown. This paper examines unique characteristics of interactional norms developed through one focal student's off-screen behaviors in her physical environment during synchronous online instruction. Using a conversation analysis (CA) framework (e.g., Heritage, 1997, 2005; Sacks, Schegloff, & Jefferson, 1974), the focal student's behavioral norms in online versus physical environments were sharply contrasted in terms of turn-taking organizations in an institutional setting, gap and overlap in speech, and identity orientations. The study argued the importance of examining the learner's off-screen behaviors where the students' agency and autonomy were enhanced, being free from the traditional interactional norms.

Interactional norms in face-to-face (F2F) second language (L2) classrooms have been extensively researched (e.g., Hellermann, 2005; Kasper, 1985; Markee, 2000; Mori, 2004 Seedhouse, 2004) in the framework of conversation analysis (CA) (e.g., Heritage, 1997, 2005; Sacks, Schegloff, & Jefferson, 1974). For instance, L2 classroom studies have shown interactants' sensitivity to different instructional contexts, reflected in their multiple adjustments of conversational organizations (e.g., Kasper, 1985; Markee, 2000; Seedhouse, 2004), and learners' active collaboration with classmates during a peer interaction (e.g., Mori, 2004; Mori & Hasegawa, 2009). Interactions in which learners participate have been viewed as a crucial component of language learning. These tell the researchers and language practitioners much about target language (TL) use by L2 learners and their language learning process. However, in an F2F classroom environment, an interaction frequently takes the form of a teacher-centered activity where the majority of students become overhearers of an interaction between the teacher and one nominated student. When students become listeners, they are rarely targeted for a second language acquisition (SLA) analysis because of their inactive verbal involvement in a turn-taking interaction. As a result, the audience tends to be viewed as invisible or passive in classroom discourse analysis, yet we actually know very little about what observers are doing in such classrooms.

In terms of technology-enhanced language learning, studies of text-based computermediated communication (CMC) for L2 learning have been well-documented since the 1990s. The majority of studies have looked at L2 learners' online written interactional behaviors. For instance, some studies have focused on norms created in text-based interactions (Mazur, 2004, Negretti, 1999), whereas others have examined L2 performance in online classroom settings (e.g., Abrams, 2003; Blake, 2000; Smith, 2004). Significantly, however, although many

researchers have focused on documenting learners' online texting behaviors, very few researchers to date have looked at L2 learners' "off-screen" (see Definitions) behaviors—that is, their speech, gestures, gazes, and other behaviors that occur in their physical environment while they are engaged in technologically mediated communication.

Although distance language courses have been widely adopted at the college level in recent years, concerns about web-based language learning still remain (Blake, 2009). A small yet increasing number of studies on distance language education have examined the effectiveness of students' online learning, such as investigating learners' learning outcomes and their perceptions of the course and software utility based on students' test results and self-reports (e.g., Blake and Delforge, 2005, 2007; Chenoweth et al., 2006). Whereas the vast majority of online learning interactions take place only through an audio channel rather than accommodating more complete audiovisual interaction, the role of the learners' physical environment in the distance education context and the behaviors they engage in during online instruction that are not visible to the instructor or classmates are unknown.

The purpose of the study featured in this paper, in contrast, was explicitly to argue the important role that learners' off-screen behaviors in their physical environments played during synchronous (real-time) online courses. I purposely chose the student's physical environment as the research site of interest because it has been overlooked in previous studies of technology-based instruction. However, it is in this learning context where students' agency and autonomy were enhanced, in contrast to the kind of learning that took place in the controlled online environment. Guided by the CA framework (e.g., Heritage, 2005; Sacks et al., 1974; Schegloff, 2007), the purpose of this study was to investigate interactional norms developed by a focal student, Mei, in both her online and off-screen environments. Specifically, I examined her verbal

and nonverbal behaviors in her off-screen environment as she observed online interaction between the instructor and a nominated speaker. This study asked, "What kind of interactional norms are developed by one student's off-screen behaviors in her physical environment?" and "What is the role of the physical environment in her learning a new language in the online/offscreen course setting?" The study took place used audio-based conferencing software (Wimba, incorporated by the course management platform *Sakai*) where the participants' off-screen environment is invisible to other class participants. The paper is based on data from one focal student who volunteered to film her own off-screen behaviors as she participated in the class. The study took an innovative approach to research methods by synchronizing video data of the student's off-screen behaviors and an audiovisual record of synchronous class interaction in a picture-in-picture format. This allowed me to view and analyze both online and off-screen behaviors of the student simultaneously. The data revealed the student's "behind the scenes" learning behaviors in her physical environment where the learner greatly benefited from the course setting. I contend here that the important role that the physical environment played in the student's language acquisition was demonstrated by her off-screen behaviors; during online instruction, she demonstrated vigorous, yet exceptionally private, engagement with language learning even when she was not a nominated speaker.

Here, I first review previous research on technology-based language instruction, including interactional norms, distance language education, and off-screen behaviors observed around computers. Then I review CA relating to interactional norms in a F2F interaction. I provide some background on distance language education. To argue the important role that learners' physical environments play in their online learning, I examine how the focal student developed her own communicative norms in the physical environment while she was an observer

of an online teacher-student interaction. I conclude the paper with implications for L2 instruction in a synchronous virtual classroom.

Literature review

Interactional norms in computer-mediated communication

With the numerous advantages of using technology, computer-assisted language learning in SLA has been well-documented since the 1990s. In technology-enhanced interactions, the majority of the studies have been done with text-based communication. In the analysis of discourse features, Mazur (2004) states that fundamental notions of a conversation in F2F need reconsideration in the online context. For instance, orderly turn-taking, one speaker talking at a time, and no overlap between turns cannot be assumed in an online interaction. Rather, violation of sequential coherence is a norm in this setting (Herring, 2004). In CMC, messages are posted as the system receives them in strict chronological order; thus, unrelated topics and messages can be juxtaposed and can create multi-dimensional texts (Werry, 1996). According to Beisswenger (2008), this gap is created due to spatial and temporal factors; the chat participants have no physical contact with their interlocutors, although they are synchronously co-situated with them as they exchange text messages simultaneously. However, "this co-situatedness is only synchronous; it lacks the possibility of processing utterances simultaneous with their production" (p. 5).

Acquiring a new language and a norm of CMC at the same time can be a challenge for the L2 learners; however, they are capable of accommodating the online conversational rule (Negretti, 1999; González-Lloret, 2011). For example, in response to the unconventional turntaking, sequential order, and a lack of paralinguistic cues, learners have developed alternative textual features, such as stating an addresser's name at the beginning of the message to reduce

communicative ambiguity (Negretti, 1999). A loose connectivity between turns might be perceived as "liberating" (Herring, 2004), which can work positively by allowing the learners to express themselves freely and frankly and improving creativity and thinking (e.g., Chun, 1994; Kern, 1995). On the other hand, it could work negatively when the learners behave offensively, known as flaming, which was more frequently observed in online interactions than in F2F interaction (Darhower, 2002). An L2 learner of Spanish was able to develop her interactional ability, showing her sympathy when the chat interlocutor discussed his personal problems (González-Lloret, 2011).

Additionally, the interactional norms in terms of the role of negotiation during CMC have been frequently compared with those that occur in a F2F setting (e.g., Abrams, 2003; Blake, 2005; Pellettieri, 2000; Smith, 2004; Sotillo, 2005; Tudini, 2003, 2007; Warschauer, 1996). For example, they looked at the quantity and types of negotiation moves, reasons for negotiation triggers in the CMC environment, etc. (e.g., Loewen & Erlam, 2006; Pellettieri, 2000; Smith, 2004).

These studies have shown some similarities and differences in the interactional norms the L2 learners engaged in between the new learning environment and F2F environment. However, overwhelmingly the majority of the studies focused on the learners' "online" written interactions; thus, we know very little about what behaviors the students engage in while in their off-screen environment participating in online interactions.

Distance language education

With advances in technology and recognition of societal needs, universities are offering an increasing number of distance language courses. Blake (2009), a leading researcher of online language education, predicts that this trend will continue to grow. Fleming and Hiple (2004) re-

defined Keegan's (1990) classic definition of distance education as the separation between teacher and student where the communication must be electronically mediated and initiated bidirectionally. However, White (2005, 2006) contends that an adequate definition of distance language learning and teaching must account for pedagogical and human perspectives, reflecting a synthesized view from practitioners, researchers, and learners.

There is a growing body of research on distance language education; however; studies are still limited in number. Earlier studies tended to examine the challenges of developing online courses (e.g., Fleming, Hiple, & Du, 2002; Garing, 2002; Garrido, 2005; Poon, 2003; Strambi and Bouvet, 2003; Wang, 2004), whereas other studies have investigated various topics that focus on shifting teacher roles (Hauk & Stickler, 2006), teacher identity (White, 2007), role of feedback (Rosi-Solé & Truuman, 2005), learner motivation (Hurd, 2006; Ushida, 2005), learner autonomy (White, 1995), and self-monitoring strategies (Chang, 2010). Other research has reported issues related to introducing cultures in online courses (Goodfellow & Lamy, 2009) and urged the reconsideration of the concept of oral competence in the multimodal environment (Lamy, 2004). Still, a great deal of interest remains, leading other researchers to assess distance language courses. Many of these studies have investigated the students' perceptions of the webbased courses and the utility of the tools available through audio and/or videoconferencing software (e.g., Hampel, 2003; Hample and Hauk, 2004; Hansson & Wennö, 2005; Rosell-Aguilar, 2006; Strambi and Bouvet, 2003; Wang, 2006, 2007; Wang & Chen, 2009). These studies have shown the merits of studying a language in virtual environments, but have also identified various challenges.

Additionally, several researchers have concerns about the effectiveness of online/hybrid language courses, compared with F2F classrooms. These studies have shown that the outcomes

achieved by online/hybrid students were comparable to those of traditional classroom students. The majority of evaluations were made based on test results in terms of specific linguistic attainment, such as writing ability (Cahill and Cantanzaro, 1997), grammatical accuracy (Blake and Delforge, 2005), oral proficiency (Blake, Wilson, Cetto, & Pardo-Ballester, 2008), and overall skills including listening and reading comprehension (Chenoweth and Murday, 2003; Chenoweth et al., 2006).

These studies not only suggest the benefits and challenges of online learning and teaching and adopting web-based tools in language education, but also help us understand that the course delivery format makes little difference in terms of students' language learning outcomes. However, many of these study findings were based on students' self-reports, student surveys, or L2 test results. Therefore, we know little about students' language acquisition processes, such as what behaviors and activities students engage in while they participate in online courses. Particularly, in online instruction where audio-based conferencing software is used, the students' learning behaviors in their off-screen environment are virtually unknown to researchers because their activities in the physical environment are invisible and inaccessible to anyone but themselves.

Off-screen behaviors around the computer

As shown in the previous section, L2 learners' online behaviors and activities in the virtual environment have been abundantly documented. Significantly, however, very few researchers to date have looked at the off-screen behaviors and activities engaged by L2 learners in their physical environment while they participate in technologically mediated communication. In a couple of studies of this nature, Payne and Whitney (2002) and Smith and Gorsuch (2004) documented learners vocalizing their speech in their off-screen environment while engaging in

text-based CMC. Other researchers have actively looked at the off-screen collaborative talk engaged in by the L2 learners in their physical environment while they participate in technologically mediated communication (Jeon-Ellis, Debski, & Wigglesworth, 2005; Kitade, 2008; Leahy, 2004). This suggests that students' off-screen behaviors during online instructions are consequential in learning.

Smith (2008) demonstrated a unique data collection method during a study examining self-repair behaviors among 46 beginning learners of German in a task-based CMC environment. Using two data sources, he compared the self-repair activities of the same learners working on the same tasks; one source was printed chat logs of online interactions and the other was files of video-screen captures that recorded the learners as they composed and edited texts during CMC. The analysis of both data sources revealed a clear difference in the amount and types of self-repair engaged in by the same learners. This method has successfully revealed the importance of examining learners' text editing activities rather than relying only on the final product (Sauro and Smith, 2010; Smith, 2008). These researchers suggested that the former data source contains rich information that can help us more accurately understand the L2 learners' cognitive processes.

The studies described above have demonstrated the beneficial role of off-screen behaviors in which language learners engage in pedagogical terms. In addition, incorporating observation of learners' off-screen behaviors as a research method helps us comprehend learners' L2 cognitive process and learning activities. However, thus far studies of students' off-screen behaviors during online language instructions have tended to focus on relatively limited L2 acquisition phenomenon. Particularly, no distance education research has taken a methodological approach to understanding learners' off-screen behaviors while they engage in the course. By examining interactional norms that one focal student developed in her physical location, the

present study integrates the idea of accounting for learners' off-screen behaviors in order to help us understand the role that the physical environment plays in the students' learning process.

In the following section, I will review literature on interactional norms in F2F and online environments based on CA framework (e.g., Heritage, 2005; Sacks et al., 1974; Schegloff, 2007). This is to be compared later with the norms created in the student's off-screen environment.

Interactional norms in face-to-face interactions

Through the use of the CA framework, interactional norms have been investigated extensively in F2F interactions (e.g., Sacks et al., 1974). CA studies the order and organization of social action found in mundane interactions between members of society (Psathas, 1995). Researchers aim to characterize interactional organization from the emic/participants' perspective and to find evidence of intersubjectivity as to how participants oriented themselves as the interaction progressed during the sequence of actions (Seedhouse, 2004). According to Sacks et al., (1974), basic facts about conversations include occurrences of turn-taking by the speakers, a tendency for one speaker to talk at a time, and a possible minimal gap or overlap between turns. When violations occur, they are considered to be social actions that require an interactional interpretation (Lerner, 1996; Pomerantz, 1984; Schegloff, 2000). Turn-taking, turn-sequence, and repair are considered to be the fundamental components that organize conversations (Hutchby & Wooffitt, 1998).

Interactional norms shown in a social setting can also be found in institutional talk (Heritage, 1997, 2005) and can be examined by applying the CA method of ordinary talk. Psathas (1995) maintains that research investigating institutional talk may consider how the social settings influence the interactional phenomena, and/or how the institutional context is

organized. For instance, one of the most fundamental aspects of institutional talk identified by Heritage (1997, 2005) is the use of special turn-taking organization that has the potential to change the action opportunity for the conversant. For example, individuals' contributions and/or speakership may be restricted in institutional interactions such as in courts of law (Atkinson and Drew, 1979), news interviews (Greatbatch, 1988; Heritage, 2002; Heritage and Greatbatch, 1991), and classrooms (e.g., MacBeth, 2004; McHoul, 1978, 1990; Mehan, 1985); however, explicit sanctions in turn-taking organization is considered a norm. This interactional characteristic tends to occur in large-scale formal environments having many potential speakers and hearers where not all individuals are allowed to gain speakership.

In the context of L2 learning, interactional norms have been investigated in L2 learners' ordinary conversation with first language (L1) speakers (e.g., Gardner, 2004; Hosoda, 2000, 2006; Kasper, 2004; Kasper and Kim, 2007; Nakamura, 2008; Wong, 2000, 2004a, 2004b) and with other L2 speakers (Carroll, 2000, 2004), while other researchers focused on classroom settings (e.g., He, 2004; Hellermann, 2003, Markee, 2000; Mori, 2004; Seedhouse, 2004). In a classroom environment, for instance, typical instructional sequences such as response-initiation-feedback/evaluation (IRF/IRE) can be found in L1 classrooms, which may be used as a strategy that the teacher takes to ask students a known question (Mehan, 1985; Sinclair & Coulthard, 1975). This can also be observed in L2 classrooms (e.g., He, 2004; Hellermann, 2003). Other studies found that interactional norms are shifted by students in different instructional contexts (e.g., Kasper, 1985; Markee, 2000; Mori, 2004; Seedhouse, 2004). For instance, Seedhouse (2004) observed that in form-and-accuracy contexts, turn-taking and sequence organization were controlled mostly by the instructor when students' every utterance in class was subject to evaluation. In contrast, in meaning-and-fluency contexts, turn allocation is determined by the

students when they are allowed to choose their own topic, such as a personal relationship. Mori (2004) described intermediate students' peer interactions in a university-level Japanese as a foreign language (FL) classroom using a single case analysis, which showed the complex nature of collaborative talk between students. Each learner demonstrated differing roles at various times at talk-in-interaction during assigned tasks, while recognizing their learning opportunities at different times.

These studies have shown the CA framework to be an effective tool for examining both ordinary talk and classroom interactions. In addition, interactional norms are found to be sensitive to the social context in which conversations take place. However, in these studies the L2 learners are strictly involved in the verbal interactions as primary conversants, whereas in a classroom environment the students are not always given speakership. Thus, the majority of students become overhearers of interactions of nominated speakers and, as a result, they play a minor and passive role in the research. However, we know very little about how such conversation observers engage in learning in a L2 classroom environment.

Methods and data analysis

In this paper I will argue the vital role that the focal student's physical environment played during synchronous online instruction while the student observed an online teacherstudent interaction. I contend that it is in the physical location where the student's agency and autonomy are enhanced in contrast to the controlled online learning environment. The purpose of this study was to investigate interactional norms developed by one focal student, Mei, in both online and off-screen environments. Guided by the CA framework (e.g., Heritage, 2005; Sacks et al., 1974; Schegloff, 2007), I examined the student's verbal and nonverbal behaviors in her

physical environment as she observed online interaction between the instructor and a nominated speaker.

I addressed the following questions:

- 1. What kind of interactional norms are developed by the focal student's off-screen behaviors in her physical environment?
- 2. What is the role of the physical environment in her learning a new language in the online/off-screen course setting?

This study is significant for online language practitioners and researchers because it will give them new insights on the important role that students' physical environments play during online language instruction. The examination of the learner's off-screen behaviors will provide rich information about student learning processes that is normally inaccessible to language teachers and researchers. By investigating the learner's interactional norms developed in both online and off-screen environments, the kind of affordances created in the physical environment by the learner can be understood. In addition, this study will interest SLA researchers because it promotes understanding of how learners' autonomy and agency can be enhanced in a less-controlled environment, even in the learning context where students may appear to be mere observers of interactions.

Site and participants

The data that follow are drawn from a large corpus of video-recorded interactions collected over one semester from online Elementary Japanese 1 offered by the Georgia Institute of Technology (Georgia Tech) in Spring semester 2009. The research sites included two components: online and off-screen environments. This 17-week online course is offered as an additional section of the first-semester Japanese class along with the classroom-based courses. It is designed to focus on four skills related to both grammatical and communicative aspects of the TL. In the synchronous module, the students are required to participate in real-time online classes two evenings each week (80 minutes each) via text- and audio-based conferencing software, *Wimba*; however, text-based interactions were not actively analyzed because they occurred infrequently. During the synchronous class sessions, the students are expected to engage in various communicative activities by interacting with peers and the instructor via microphones. The students are allowed to log into the class from any location as long as there is a reliable computer and Internet connection. To complement the scheduled online classes, students are given assignments and web-based self-exercises that require their attention between classes. No instructions were given outside the scheduled online classes.

In terms of the online classroom component, the participants communicate with each other through oral/audio communication by clicking on the TALK button on the screen (Appendix A). Due to Voice over Internet Protocol (VoIP), simultaneous communication is technically not possible via oral chat. In other words, when multiple people talk at the same time, one hears echoes that interrupt normal communications. In addition, the audio has an inherent delay of less than one second. As a focal point of the classroom environment, teaching materials are projectable in a shared e-board where the instructor and/or students can write using a pen tablet or mouse. A public text-chat is always available to the participants in English and Japanese. Additional tools such as icons/emoticons can be used as part of instruction, which simulate nonverbal activities routinely used in F2F interaction. However, no web camera is used; therefore, the participants' facial expressions and other nonverbal behaviors are not visible to the class members, and their physical location is not observable.

The off-screen component of this study took place at a campus computer lab where the focal student was physically located for participation in the online instruction.

Three participants shown in the excerpts include an online nominated student, Vince (V), his co-interactant, the teacher (T), and the focal student, Mei (M), who was privately observing the interaction between the nominated speaker and the teacher as she sat in front of her computer. The primary focus of analysis will be on Mei, a female third-year undergraduate student at the university. She volunteered to participate in this study as a focal student, filming herself in her off-screen environment. She is originally from China and is fluent in English as a second language. Throughout the semester she logged into the course from various locations, such as from her home, a friend's house, or campus computer labs. Occasionally she participated in class from the same computer lab where I was conducting class; however, we were sitting apart from each other with our backs turned; therefore, there was no off-screen interaction between us. To make a note regarding this point, she was the only student in my teaching experience who made an arrangement with me to use the computer lab on the first day of the class before the research began; therefore, I did not object to her using the lab.

Besides the participants already mentioned, five additional students were enrolled in the course. The class was composed of four female and five male students. Except for one graduate student, all were traditional students enrolled in undergraduate programs. There were no students majoring in Japanese. I am a Japanese-English bilingual who co-developed and taught the online Japanese courses at the institution for several years, and I was the instructor of this course.

Data collection

The study had two primary data sources, which include the online course archives (a total of 27 hours) and the focal student's video-recording of herself in her physical off-screen

environments (approximately 20 hours). The online data were collected by archiving the lesson using the built-in feature of *Wimba*. The off-screen data were collected by the focal student, who filmed her off-screen behaviors in her physical location at the time the class was conducted. The two data sources were synchronized with video editing software, *Adobe Premier Pro CS4*, after converting them to compatible formats. The resulting corpus represented approximately 20 hours of synchronized online/off-screen video. This allowed me to view the students' online class and off-screen activities simultaneously in a picture-in-picture format (Appendix B). Other data were collected, including essay assignments, surveys, and interviews with study participants; however, they did not play a major role in this study.

Procedure

On the first week of the semester I began recording the online classes using a *Wimba* archival tool that is a built-in feature of the software. The announcement of the study was made via email during the third week of the semester, and all students who enrolled in the course agreed to my conducting the research. I met with the focal student on campus after she responded to my recruitment flyer about filming her off-screen activities. She signed a consent form to participate in the study and received recording equipment and instructions (Appendix C). The duration of filming was between 60 and 70 minutes for each class, and recording lasted for 11 weeks. However, due to personal, technical, and budgetary limitations, the duration and the condition of each recording were not always uniform or comprehensive; that is, duration varied depending on the device used.

Data analysis

Using *Adobe Premier Pro CS4*, I roughly transcribed all verbal behaviors and visual information in the archived online classes and the focal student's off-screen verbal and nonverbal

behaviors (Appendix D). As I developed transcriptions, I watched the synchronized video recordings numerous times to capture both verbal and nonverbal behaviors of the focal student. Two whole-class activities from each class were chosen from the corpus (approximately four hours) because the data included the focal student's off-screen verbal behaviors more than peer interactions. The focal student's off-screen activities that are different from both online classroom and F2F classroom settings were targeted for a closer look. The selected data were further transcribed following the conventions developed by Gail Jefferson (Schegloff 2007) (Appendix E) and analyzed using the CA framework (e.g., Heritage, 2005; Sacks et al., 1974; Schegloff, 2007). This allowed me to examine the focal student's verbal and nonverbal behaviors in detail, such as intra- and inter-pauses, sound stretches, gazes, posture changes, and body movements.

In addition, I made a quantitative comparison of Mei's online (nominated) and offscreen (non-nominated) speech by sampling two teacher-centered activities (approximately 10 minutes each) from the class. I categorized the utterances based on the definitions as follows: Sentence: "a syntactic unit consisting of a noun phrase and a verb phrase" (O'Grady et al., 2001, p. 727).

Example: watashi no senkoo wa konpyuuta koogaku desu ("*My major is economics*.") Phrase: "a sequence of adjacent words that form a syntactic unit or constituent in the structure of a sentence" (Fromkin, 2000, p. 708).

Example: sorewa kyookasho ("That textbook")

Word: "a complete linguistic unit that is meaningful on its own" (Fromkin, 2000, p. 720). Example: tsukue ("*desk*")

Fragment: an incomplete linguistic utterance which contains part of a word, frequently uttered prior to giving speech (self-defined).

Example: sumisu san no senkoo wa **keeza** keezaigakudesu ("*Mr. Smith's major is eco, economics.*")

Transcription

Due to unique qualities of the synchronized data excerpts, I have developed transcripts that consist of two columns in order to capture simultaneous actions engaged in by both online and off-screen participants. The actions presented in the same row in different columns show that the activities were taking place at the same time. The left side of the column describes online classroom interactions, and the right side of the column shows the focal student's off-screen verbal and nonverbal behavior in her physical environment. English translations of the Japanese utterances are given in italics below transcriptions of the audible utterances. While some activities that occur independently from speech are shown in double brackets, other nonverbal behaviors and activities are reported in square boxes with arrows. The arrows indicate exact points of time where speech and actions co-occurred. This part of the transcription was guided by Mori (2004).

Activity purposes

The grammar activity featured in this study had two purposes. First, it was to reinforce one of the most basic Japanese grammatical structures, *X wa Y desu* ('X is identified as Y'). X is considered as a sentence topic that is marked by the topic marker *wa*, and Y is a comment which consists of the copula verb *desu* at the end of a sentence. Second, the exercise aimed to introduce new vocabulary such as *economics*, *international affairs*, and *computer engineering*, which allowed students to discuss their majors. For example, when X introduces a sentence topic,

watashi no senkoo ("my major"), Y can be filled by a sentence comment, such as *keezaigaku* ("economics"). Using this grammar structure and vocabulary, a complete sentence such as *watashi no senkoo wa keizaigaku desu* ("my major is economics") can be constructed.

I argue the important role that the focal student's physical environment played during a synchronous online course. Guided by the CA framework (e.g., Heritage, 2005; Sacks et al., 1974; Schegloff, 2007), I investigated interactional norms developed by Mei in her physical environment during online instruction even when she was not a nominated speaker. I contend the focal student's physical location, in which she actively engaged in verbal and nonverbal behaviors, was the context where her agency and autonomy were enhanced, being free from the controlled environment.

Findings

An audience who hears and speaks

Heritage (1997) states that special turn-taking organizations can be formed in an institutional setting that are different from talk performed in a casual conversational situations. For instance, in a large-scale formal environment such as a classroom, turn-taking organization shows a tendency to be modified because there are many potential speakers. The potential speakers become an "overhearing audience" when only one or two speakers are allowed to take speakership (Heritage, 1997, p. 165).

As Excerpt 1 shows, the online interaction aligns with this tendency; particularly when the interaction between the nominated speaker and instructor is taking place during the teachercentered activities, other non-nominated students' speakership is restricted. This means that the third party in the interaction is expected to be aurally participating in class, but not orally. Interrupting the communication or instruction is normally socially unacceptable; however, the

discourse characteristic is reinforced for technical reasons. For instance, due to the nature of VoIP, the students avoid speaking while others are on speaker. Additionally, nonuse of a web camera creates communication with reduced nonverbal cues. These software features require the presence of a traffic controller who mediates turn-taking; therefore, the teacher takes this role. With these conditions, the students' opportunities for speaking up in this class were primarily determined by the instructor. This is particularly apparent in the initiation-responsefeedback/evaluation (IRF/E) sequence frequently seen in this class.

For instance, in Excerpt 1 the teacher first initiates her question to students in line 10, stating *jaa what about <u>international affairs</u>?* ("Well, what about international affairs?"). The nominated student, Vince, attempts his response (lines 24-34) by giving the vocabulary in Japanese *kokusaikankeeron* (international affairs), but his speech is marked by hesitation, lengthened vowels, and intra-pauses. Finally, the instructor gives feedback in the following turn (lines 36- 37), *soodesune:: kokusai kanke:ron desu kokusai kanke:ron desu* ("That's right. It's international affairs"). During this time, non-nominated students, including the focal student, Mei, did not engage in an online dialogue. It is assumed that they are listening to the online interaction between Vince and the instructor.

Excerpt 1

M: Off-screen student, Mei

T: Teacher

V: Nominated student, Vince Hanks

1.		Classroom online speech	1	Mei's off-screen speech	
2.	Т	etto (0.8) ee jaa my majo	or i::s ee:::		
3.		um uh well	uh		
4.		economics.			
5.		that means uh:: you		((Flips a page	on notebook))
		uh	Gaze shifts fro notebook	om screen to	

6.	Т	would sa::y watashi no	
7	т	my	
1.	1	senkoo wa keizaigaku desu	watashi no ^{sos} esse:nkoo wa:: •
		major topic economics copula	my major topic
0		muight? ((Taingles international officing on	My major
ð. 0		1gnt? ((1 circles international analis of	Leans on the computer
<i>9</i> . → 10	т	e-board))	desk and attention goes
F 10.	1	Well	to notebook
11		(0.8) Gaze shifts back to class	
11.		(0.0) (0.0) (0.0)	°°kokusaikankeeron°°
12.		well	international affairs
13		(15)	international affairs
13.		borantia shitekudasai	
11.		volunteer please do	Looks at notebook lower
		"Please volunteer"	part of computer screen
15		(2.9)	and elsewhere indefinably
16	Т	international affairs	
17	-	my major is international affairs	°°kokusaikankeeron°°
17.			international affairs
18.		(8.4)	=°°kokusaikankeeron
			international affairs
19.		¥	=kokusai kokusai°°
			international international
20.			=°°kankeeron°°
			affairs
21.	Т	hai hankusu san ((Vince's last name))	°°kokusai°°
		"Yes, Mr. Hanks"	international
22.		(2.5) ((T starts writing the word kokusai	((Slightly move right hand
23.		kanke:ron on the e-board))	and head))
→24.	V	uh::	
25.		(1.4)	(0.3) Looks at notebook
26.		↓	°kokusaikan°=
		Gaze shifts to screen	international aff-
27.		ko::ku::	≜ °keeron°
		inter-	-airs
28.		(0.6) Gazes at screen	
29.		sa::i::	°sa::i°
		-national	-tional
30.		(0.2)	Shakes head and
31.		ga::	continue gazing at
32.		((incorrect sound))	screen
33.		(0.6)	K bereen
34.		koku::sa::i (0.1) ka:nke::(0.2) ro::n	°kokusa::i kankeeron°
		international affairs	international affairs
35.		(0.7)	

soodesune:: kokusai kanke:ron desu ((Nods extensively a few times)) =kokusai kanke:ron desu = okay jaa:: my major is computer =engineering eetto jaa jangu san

39. =engineering eetto jaa jangu san "That's right. It's international affairs. It's international affairs. Okay, then, my major is computer engineering. Um, then, Ms. Jung"

→36.

37.

38.

Т

However, Mei's off-screen activities demonstrate a considerable amount of her off-screen talk. Mei's talk and actions are spread across turns where she is not only a listener but also an active speaker in front of her computer. To illustrate this point, Table 2 summarizes the amount of TL talk Mei engaged in during two teacher-centered activities (approximately 10 minutes each) sampled from this class. The figures in the first row show a number of audible utterances produced at the various linguistic levels when she spoke online as a nominated speaker, and the second row indicates those in her off-screen environment. A quantitative comparison shows that Mei made utterances at all linguistic levels in Japanese more frequently in the off-screen environment, when she was not an active participant in the interaction, than she did in the online environment. This indicates that Mei's off-screen activities were not only limited to that of an "overhearing audience," but that she was also an active speaker.
Table 2

Linguistic levels	Sentence	Phrase	Word	Fragment	Total
Online (nominated)	4	0	2	1	7
Off-screen (non-nominated)	12	11	23	0	46

Quantitative comparison of Mei's TL speech in the online versus off-screen environments

In the following excerpt (Excerpt 2), I qualitatively examine Mei's off-screen speech and behaviors as to what actions she privately engaged in, and how these differ from interactional norms set in the online and F2F interactional contexts. In lines 2 to 10, the instructor explains the focus of the upcoming online grammar activity, and Mei privately engages in verbal and nonverbal actions. Her action is initiated by her use of the notebook, flipping a page immediately after she hears the instructor's introduction of a new vocabulary word, *economics*, in line 4. This action shows Mei's understanding of the forthcoming task based on her previous experiences in the course where she anticipates the teacher's next action, asking a series of questions related to the target structure. Her action is made based on her cultural "script" (Schank & Ableson, 1977) in order to direct herself with appropriate conduct and social identity even when she is invisible from the other class members. It demonstrates involvement in the task as an attentive listener, yet in the next minute she begins talking while the teacher is still at her turn. (Mei's overlap speech is discussed in the next section.) When the instructor gives an example sentence in Japanese to the whole class as an introduction of the activity (lines 6–7), Mei begins imitating her speech quietly in line 7, °°°watashi no °°° °°se:nkoo wa:: °° ("My major"). This shows Mei's active involvement with the task by privately selecting herself as the next speaker. Mei's gaze shifts

from the computer screen to her own notebook, which suggests her utterance in line 7 is not necessarily to show her shared understanding of the previous turn to the co-interactant, commonly suggested in a F2F interaction as in the "architecture of intersubjectivity" (Heritage, 1984, p. 254). Rather, it takes the characteristic of private speech, the concept developed by Vygotsky (1978); that is, she makes self-directed utterances, which can be fragmented, whispered, or abbreviated and play an important role in intellectual development (Ohta, 2001). Excerpt 2



In lines 8 to 9, the instructor draws a circle on the target vocabulary, *international affairs*, on the board. It shows the instructor's preparation for her next utterance and her expectation for the students to eventually construct sentences in the TL. In line 10 the teacher attempts to elicit a response from students by asking a question, *what about international affairs?*, initiating a question. However, Mei's attention in her off-screen environment is on her notebook rather than the instructor's question in the online class (Figure 1). Her upper body is leaning toward the

computer desk, looking at her notebook as her lips are moving slightly but continually. Her speech is inaudible.



Figure 1. Mei's full attention to her notebook

Mei's body orientation, gaze, and lip movement show her full attention to her own learning agenda, engaging herself in the learning material as opposed to responding to the online interaction prompted by the instructor's initiation of a question. The change in her body posture in Figure 2 shows her attention is brought back by the instructor asking for a volunteer in line 12, *ja:: any volunteer?* ('Well, any volunteer?'). It shows her sensitivity to classroom direction as a student even though the teacher is not physically in front of her in a classroom.



Figure 2. Mei's attention is back to class at the instructor's request

She does not appear to be a mere listener in this class even when she is not given speakership online. Her nonverbal behaviors, such as gaze and posture, suggest that she is as attentive to the virtual class instruction as she would be as a student in a traditional classroom. However, in the off-screen environment she does not remain an "overhearing audience." She not only listens, but also speaks freely in her off-screen environment. The off-screen environment allows her to make an active decision as to when she listens and/or talks.

Rehearsal during overlap and gap in speech

Sacks et al. (1974) state that in ordinary conversations, "transitions (from one turn to a next) with no gap and no overlap are common. Together with transitions characterized by slight gap or slight overlap, they make up the vast majority of transitions" (p. 708). According to Seedhouse (2004), in most contexts, less than 5% of F2F speech shows no overlap, and gaps are generally measured in tenths of a second. In addition, Sacks et al. (1978) maintain that in ordinary talk, "occurrences of more than one speaker at a time are common, but brief" (p. 706). This means that both gaps and overlap do occur at times. When they do occur, they are interpretable social actions (Liddicoat, 2007) that carry interactional meanings. For instance, overlap speech may show an interactant's motivation to gain speakership, and/or show enthusiasm or disagreement (Schegloff, 2000). Dispreferred responses and topics that are perceived to be sensitive entail a slight delay prior to delivery (Lerner, 1996; Pomerantz, 1984).

In contrast, turn-taking in the online class is characterized by lengthy inter-pauses, particularly when the speaker changes from instructor to students. For instance, in Excerpt 3 the instructor's waiting for students to volunteer takes between 1.5 (line 13) and 8.4 (line 18) seconds. These characteristics are shaped in relevance to technical features, such as non-use of a web camera and the VoIP, that causes visual cues important in communications and required for a smooth transition to be missed (Goodwin, 1979; Goodwin & Goodwin, 1986). A lack of visual cues reduces the communicative clues, such as eye gaze, gesture, etc., and the VoIP feature tends to create a bigger gap between turns in order to avoid simultaneous talk with another speaker. A

combination of these factors causes ambiguity of turn transition space and requires a teacher to mediate each turn.

However, Mei's off-screen verbal and nonverbal behaviors do not resemble those in either a F2F interaction or online interaction. For instance, in online classroom interactions, gaps between turns are frequently observed. However, in the off-screen environment, Mei's speech, °°*kokusaikankeeron*°° ("international affairs") is completely overlapped with the instructor's online turn in line 12, *ja:: any volunteer*? ("Well, any volunteer?"). In the online interaction, similar to those in F2F classrooms, students' speakership is sanctioned by the instructor and by the social rules set in class. Therefore, students' private chatting while the instructor is talking is considered to be inappropriate. However, vocalizing their utterances in a private space cannot influence what is happening in the virtual classroom environment. The TL use will not become a subject of the teacher's evaluation, unlike in F2F classrooms where speech and activities that students engage in during class, which are visible and audible to the instructor, have a potential to be judged (Seedhouse, 2004).

Mei's overlap speech appears when she does not strictly follow a turn-organization sequence, and it does not influence others' interaction even when she violates norms of F2F communications. In terms of silence, lengthened pauses occur frequently while waiting for someone to take speakership in the online class, as in line 13. Although such time may appear to be an interruption of continuity in class interactions, the off-screen student makes good use of such time. After a short pause, the teacher restates her request in Japanese, as in *borantia shitekudasai* ("Please volunteer") (line 14), asking for a volunteer to respond to her question. The instructor pauses another 2.9 seconds waiting for a volunteer. Then she repeats the target vocabulary in English, *international affairs*, and clarifies her question in English by restating the

target sentence, *my major is international affair* (lines 16-17). At the same time in the off-screen environment, Mei's gaze begins shifting rapidly from place to place, indicating that she may be nervous. For instance, she looks at her notebook, the lower part of the computer screen where she can monitor an icon to see if any classmate is volunteering, and elsewhere. Along with the change in gaze, she vocalizes the target vocabulary, ^{oo}*kokusaikankeeron*^{oo} ("international affairs"). The whole class is silent for the next 8.4 seconds (line 18), waiting for someone to volunteer. Mei fills this time talking to herself privately. She continues to quietly rehearse the target word to herself in front of her screen. Mei repeats the word twice. Then she breaks the word into two parts, self-repairing the utterance by saying ^{oo}*kokusai kokusai kankeeron*^{oo} (line

19-20).

Excerpt 3

12.		ja:: any volunteer? (0.5) ((clear throat)) <i>well</i>	°°kokusai kankeeron°° international affairs
13.		(1.5)	
14.		borantia shitekudasai	
		volunteer please do	Looks at notebook, lower
		"Please volunteer."	/ part of computer screen,
15.		(2.9)	/ and elsewhere indefinably
16.	Т	international affairs	↓ L
17.		my major is international affairs	°°kokusaikankeeron°°
			international affairs
18.		(8.4)	=°°kokusaikankeeron
		\downarrow	international affairs
19.			=kokusai kokusai°°
			international international
20.			=°°kankeeron°°
			affairs
21.	Т	hai hanksu san ((Vince's last name))	°°kokusai°°
		"Yes, Mr. Hanks"	international
22.		(2.5) ((T starts writing the word kokusai	((Slightly moves right hand
23.		kanke:ron on the e-board))	and head))

Gaps and overlapped speech have different meanings for the off-screen students in this class. Overlapped speech is possible because the student's language use and behaviors are not targeted for evaluation by the instructor. For the focal student in her private environment, silence provides time to vocalize her speech, preparing herself for a possible nomination call in the next turn. She engages in the repetition of the target words without being heard or seen by other participants. She is indulged by an environment where she can freely test her linguistic skills. She is also free to rehearse her speech by speaking out loud instead of performing mere unvocalized rehearsals in her head, which she would do if she were in a classroom environment where class members could observe her behaviors.

An identity shift

From the CA point of view, contexts can be dealt with in two ways. One deals with dataexternal environmental contexts where the talk is performed, and the other deals with datainternal sequential contexts where the context is designed and developed locally at each turn by the interactants (Mori, 2007; Zimmerman, 1998). Although the former remains a relevant factor of the interaction, the latter is manipulated and constructed by the conversants through their sequential turns, and identities are viewed accordingly. Externally determined social identities of each interactant affect the participants' interactions, whereas the kind of identities that the conversant exhibits internally on a moment-by-moment basis may change based on the context. Therefore, any analysis must be focused on the emic perspective, the view point projected by the interactants' co-construction and collaboration. Heritage (2005) finds that early CA studies in institutional interactions showed distinctive differences from ordinary conversations. They showed that a special turn-taking system shapes the fixed method of taking turns, and specific institutional identities and tasks are developed with certain constraints. Similarly, in the online class, the special turn-taking sequence between teacher and student reinforces the assumed social identities through various assigned tasks. This is because both parties orient themselves to achieving task-oriented institutional goals. For instance, the context and role of each participant become clear and definitive during the teacher-centered activities. This is exemplified in Excerpt 4 when Vince is nominated by the instructor as he showed his willingness to volunteer (line 21) in response to the instructor's initiation of a question in line 10. The teacher has control of allocating turns, reinforced by the software feature, while inviting responses. In contrast, the students' turns tend to be short and to the point. Vince begins his speech to the whole class by starting with a hesitation marker, "uh::" and an intra-pause (line 24–25). Throughout his turns, Vince's speech is characterized by disfluency, including lengthened vowels and intra-pauses. His speech is constantly monitored by the instructor during his turn, where Vince orients to his social identity as a respondent/student. Excerpt 4

21.	Т	hai hankusu san ((Vince's last name)) "Yes Mr. Hanks"		°°kokusai°° international			
22		(2.5) ((T starts writing the word kokusai			((Slightly moves right hand		
23		kanke ron on the	e e-board))	i u Kokubul	and head)		
24.	V	uh::	••••••••••••••••••••••••••••••••••••••		(1	
25.		(1.4)			(0.3)	Looks at	
26.		1			°kokusaik	can ^o =	
		·	Gaza shifts	to screen	<i>internatio</i>	onal aff-	
27.		ko::ku::] [▲] °keeron [°]	о О	
		interna-			-airs		
28.		(0.6)	Gaz	ves at screen			
29.		sa::i::	Gaz		°sa::i°		
		-tional			-tional		
30.		(0.2)			1	Shalvaa haad and	
31.		ga::				Snakes nead and	
32.		((incorrect sound	d))			continue gazing at	
33.		(0.6)			¥	screen	
34.		koku::sa::i (0.1)	ka:nke::(0.2)	ro::n	°kokusa::	i kankeeron°	
		international d	affairs		internatio	onal affairs	
35.		(0.7)					

Conversely, turn-by-turn analysis of the off-screen context shows that the off-screen student's orientation to identity does not appear to be unitary. In Excerpt 5, Mei's speech in line 7, ^{ooo}watashi no^{ooo} ^{oo}se:nkoo wa:: ^{oo} ("My major") is triggered by the instructor's previous online speech, watashi no senkoo wa keizaigaku desu ("My major is economics.") (lines 6–7). Mei models her utterance in imitation of the instructor's. Her turn demonstrates that she is an apprentice at this moment, following the teacher's instruction closely in her off-screen environment.

Excerpt 5

1. 2.	Т	Classroom online speech etto (0.8) ee jaa my major i:	Mei's off-screen speech
3. 4.		<i>um uh well</i> economics.	uh
5.		that means uh:: you	((Flips a page on notebook))
6.	Т	<i>uh</i> would sa::y watashi no <i>my</i>	Gaze shifts from screen to notebook
7.	Т	senkoo wa keizaigaku desu major topic economics cop	u ^{°°°} watashi no ^{°°° °°} se:nkoo wa:: ^{°°} ula my major topic "My major"

Similarly, in the following phase (Excerpt 6) Mei continues playing the role of her social status as a student who diligently rehearses her speech in private (lines 17–21). She engages in the task when no one is interacting with her. She repeats the same word, *kokusaikankeeron* ("international affairs") multiple times in order to perform well for the whole class. It shows that she attempts to perform her best to demonstrate her ability as a student. She is well aware that the teacher might nominate her for this task in the subsequent turn.

Excerpt 6

16.	Т	international affairs	
17.		my major is international affairs	°°kokusaikankeeron°°
			international affairs
18.		(8.4)	=°°kokusaikankeeron
		\downarrow	international affairs
19.			=kokusai kokusai°°
			international international
20.			=°°kankeeron°°
			affairs
21.	Т	hai V san	°°kokusai°°
		"Yes, Mr. V"	international
22.		(2.5) ((T starts writing the word kokusai-	((Slightly moves right hand
23.		kanke:ron on the e-board))	and head))

In contrast to the previous phases, approximately at the same time as Vince's onset of speech in line 24 (Excerpt 7), Mei begins her off-screen utterance. Mei privately utters the target vocabulary °kokusaikan° °keeron° in lines 26–27 ("international affairs"). She speaks with a slightly greater volume than in her previous off-screen utterances. By the time Vince completes the first two syllables of the target vocabulary, ko::ku:: ('inter-") (line 27) which is marked by a fair amount of vowel lengthening, Mei accurately gives the target word. This resembles a vicarious response in the form of private speech, in which a student responds in place of another classmate (Ohta, 2001). In this utterance, though, in a private environment, Mei shows her growing confidence to recite her speech to the class when her gaze moves from her notebook, which helps her speak the target form, to the computer screen where she has nothing to guide her but her own experience and memory. Then Vince has a 0.6-second intra-pause in his online speech (line 28), followed by uttering the third and fourth syllables, *sa::i::* ("-national") in line 29. In line 29, in her off-screen environment, Mei monitors classroom interaction, demonstrated by her gaze at the computer (Figure 3); at the same time Mei aligns her speech with that of Vince's and utters °sa::i° with a lengthened vowel similar to his.

Excerpt 7



Figure 3. Mei is aligning her speech with Vince as she gazes at the computer screen.

Mei notices Vince's substantial effort to say the target word. At this point her speech is no longer directed to herself as in the previous sections, but is addressed to the online speaker, Vince, although Vince cannot hear her. At this moment it appears that Mei shifts her identity orientation from that of an institutional role as a novice learner to a confident expert who offers scaffolding (Bruner, 1960; Wood, Bruner, & Ross, 1976) to Vince. In line 31, after making a 0.2-second intra-pause, Vince makes an incorrect sound, *ga*. Off-screen, Mei quickly shakes her head in front of the computer, showing disagreement with Vince's speech (Figure 4). In line 34, Vince self-repairs his speech, yet his utterance persistently consists of extra vowel lengthening and intra-pauses, as in *koku::sa::i (0.1) ka:nke::(0.2) ro::n* ("international affairs"). In off-screen talk, Mei re-aligns her speech with Vince's by lengthening the vowels between /a/ and /i/ as in "kokusa::i" similar to his utterance, *koku:.sa::i*. In line 36, the instructor gives feedback to Vince's answer, and Mei nods knowingly in the private environment, showing her approval (Figure 5).



Figure 4. Mei shows disagreement by rapidly moving her head.



Figure 5. Mei shows agreement by nodding expansively.

Unlike in the previous phases, Mei actively speaks to the nominated student in her offscreen environment and participates in the online dialogue as if she were the interactant. Her role does not remain as novice; rather, she actively takes the role of expert. It seems that the offscreen context allows the learner to behave as she desires, free from the constraints of an institutionally assigned role. On one hand, Mei's offering help for Vince, eye gaze at the computer screen, and gesture showing agreement and disagreement by moving her head indicate her confidence and mastery of the target word. On the other hand, her speech could sound intrusive and bossy if she shared a physical space with her classmates. Additionally, overt evaluation of a peer's speech, showing through explicit gestures, would appear as dispreferred behavior and face-threatening to peers. This behavior is socially unsuitable in an F2F classroom and is not normally engaged in by students.

Conclusion and implications

The above analysis showed that Mei is creating her own interactional norms in her physical environment as she privately participates in class through her speech, gaze, posture, and interaction with her physical desktop, which includes her notebook. Mei participates in the online interaction not as a passive observer, but as an active participant who speaks and utilizes online silence as rehearsal time in her off-screen environment. She orients her identity, shifting from an apprentice to a confident expert, on a moment-by-moment basis.

The online interactions became organized into a special turn-taking system in which distribution of turn-taking is unequal, primarily because of the technical characteristics of the software in the institutional setting. These factors created the interactional norm in the online classroom that tended to provide a more controlled learning environment for the students. For instance, the teacher tends to control the floor by allocating turns and acts as a question initiator. On the other hand, only the nominated students in the online classroom were given speakership while others were expected to listen; therefore, the students' speakership was restricted. The lack of visual clues such as gazes during turn transition caused ambiguity in turn transition and next speaker selection. Even after the teacher selected the subsequent turn-taker, a lengthy inter-pause was often noticed, which showed a different interactional characteristic than that of ordinary speech. Such lengthy pauses appeared to interrupt the continuity of class interaction at times. In this environment, the student and the teacher strictly oriented to their socially assigned identities in order to fulfill the interactional goal in the given institutional setting.

These online interactional traits distinctively showed another picture when examining the focal student's off-screen activities, where Mei created norms specific to her private environment. Mei's engagement in verbal behaviors in the physical environment showed her taking an active role in her learning even when she was not a nominated student. In fact, the student was more verbally active in her off-screen environment when she was not a nominated speaker than when she was allowed to talk in the online environment. Contrary to what the literature on F2F institutional interactional norms shows (Heritage, 2005), an off-screen audience that overhears the interaction need not take a passive role in a private environment. The focal student did not worry about actively taking private turns while the instructor was taking speakership online. She prioritized her learning agenda by vocalizing her speech rather than

waiting for the instructor to complete her turn. Mei's private turn was not necessarily taken as a conversant, developing intersubjectivity with the online interactant, as normally occurs in a F2F interaction (e.g., Heritage, 1986; Sacks et al., 1974). She actively vocalized the TL while the class interaction was suspended during a lengthy silence without being concerned about being evaluated. Further, the institutional context did not solely define what identity the student oriented to during the online instruction; rather, she enthusiastically chose the role she desired to play at the moment of the speech. Specifically, Mei's verbal and nonverbal behaviors showed her attentiveness to the instruction and duty as an apprentice; on the other hand, her actions as an "expert" showed an excess of confidence that would have appeared to be face-threatening if observed by other students in a F2F interaction.

Overall, Mei had a great advantage from being in the online/off-screen course setting. She was able to immerse herself in the online virtual environment to seek instruction as needed, and her off-screen physical environment allowed her to actively engage in language learning based on her own learning agenda when she was not nominated to speak.

The study shows the vital role that the physical environment plays in students' language learning during online instruction, even when they might appear to be mere observers of the class interactions. It demonstrates a great potential for online language learning using audio conferencing software. The communicative norm that was developed in this institutional context suggests oppositional learning possibilities. On the one hand, the online environment showed that students have restricted opportunities to take speakership due to the technological features of the software. On the other hand, the online environment allowed some students to remain as passive observers/listeners of the online interactions, whereas it is this learning context that

generated the greatest affordances of language learning. That is, students are allowed to create a private learning environment of their own where the control is up to each individual.

In terms of the methodological approach, this study successfully provided rich information about online students' behaviors in the private environment, without which we would have an entirely different view of students' learning processes in this course. Whereas the majority of research in technology-based instruction has paid much attention to what appears in the online environment, this study has shown the importance of incorporating the examination of students' off-screen activities in order to gain insights into what affordances that students might obtain in this learning environment. The study demonstrates that the physical context is where students' agency and autonomy are enhanced when they are free from the controlled classroom.

While additional SLA research in the online/off-screen environment is needed, this study demonstrates the importance of these less-explored data for informing SLA researchers, FL/L2 educators, and technologists. Students' vigorous engagements in TL practice outside the online environment might be easily dismissed unless we critically consider what the environment can offer to students' learning in our research and classroom practice. In the application of technology to classroom practice, one must examine not only what appears as an immediate benefit of technology, but also the affordances that might be created by users themselves through the given technology.

The implications of this study could be extended to the classroom-based environment. Here "off-screen" effects might be replicated by using computerized tools such as voice/text discussions (*Wimba*) where the students can engage in "off-screen" speech activity prior to and/or after posting their online messages.

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CHAPTER 4

LEARNERS' OFF-SCREEN LEARNING BEHAVIORS DURING COMPUTER-BASED JAPANESE AS FOREIGN LANGUAGE INSTRUCTION²

² Satomi Suzuki. To be submitted to *Modern Language Journal*.

Abstract

Distance language courses have been widely adopted as a form of university education in recent years, yet concerns remain about web-based language education (Blake, 2009). The majority of the literature on technology-based instruction addressed such concerns by examining the "online/virtual" component of the students' learning and/or their learning outcomes. However, what role the students' off-screen behaviors in their physical environment play during synchronous (real-time) web-based language instructions is virtually unknown to researchers and practitioners. This paper examines three focal students' off-screen learning behaviors and activities in their private environment and the role they played in the students' language learning process during synchronous computer-based foreign language instructions. Guided by the ecological and semiotic approach to language learning (e.g., Kramsch, 2002; van Lier, 2000, 2002, 2004), I argue the importance of investigating the language learners' off-screen activities in their physical environments during the online class instruction. This understudied learning context is where various affordances and constraints emerge as the learners actively interact with their physical environment through semiotic tools. One finding of this study is that the learners actively engaged in diverse off-screen activities, including private scaffolding via technological tools, imitating others' speech beyond the pedagogical intention, and engaging in the target language dialogues with an imaginary interlocutor. The study also found evidence that the learners' autonomy and agency were enhanced during online instruction when they were free from a traditional classroom.

Overwhelmingly, studies examining students' learning behaviors, particularly during online text-based interactions, have documented the benefits of technology use in foreign and second language (FL and L2, respectively) learning since the 1990s (e.g., Abrams, 2003; Bauer, deBenedette, Furstenberg, Levet, & Waryn, 2006; Beauvois, 1992, 1997; Belz, 2003; Blake, 2000; Chun, 1994; Hudson & Bruckman, 2002; Kern, 1995; Kötter, 2003; Lai, Fei, & Roots, 2008; Lai & Zhao, 2006; Loewen & Erlam, 2006; Muller-Hartmann, 2000; Pellettieri, 2000; Sauro, 2011; Smith, 2004; Thorne, 2006; Thorne & Smith, 2011; Tudini, 2003, 2007; Warschauer, 1996). With advances in technology, web-based distance language courses have been widely adopted as a form of university education in recent years; however, concerns about online language education still remain (Blake, 2009). Such concerns have been addressed in a small yet growing number of studies, many of which have examined students' perceptions of software utility and the effectiveness of online learning compared with language acquisition in traditional classrooms (e.g., Blake and Delforge, 2005, 2007; Chenoweth, Ushida, & Murday, 2006). White (2006) states that what makes the distance language learning unique yet challenging is the fact that the teacher is absent in the students' physical locations and therefore not available to assist and guide them. This is truly the case when classes are offered via audioconferencing software; online participants' off-screen activities, including their gestures, body movements, or facial expressions, are invisible to others. In an online class like this, students are simultaneously present in their online (class) and off-screen (private) environments; however, they do not share the physical environment with the other class participants. However, the majority of previous studies on technology-based instruction overwhelmingly focused on examining students' "online" learning behaviors and activities and/or the effectiveness of technology-based learning.

This paper, in contrast, highlights the important role that students' physical environment plays during a synchronous (real-time) online instruction. Whereas an "online" environment has been the primary research context in past years, students' "off-screen/physical" (see Definitions) environment has been a blind spot for many researchers and teachers due to the invisibility of the location and inaccessibility of related data. Yet, studying student behaviors in the offscreen/physical location offers the potential to improve our understanding of the learners' perspectives and how they acquire a new language in virtual classrooms. Guided by ecological and semiotics perspectives on language learning (e.g., Kramsch, 2002; van Lier, 2000, 2002, 2004), I contend that it is in this very environment where the various affordances and learning potential emerge through a student's active interactions with the physical environment. This approach views language acquisition as the totality of the relationship between learners as living organisms and all the components of their surrounding environment (Kramsch, 2002). In this tortuous process, the learners strive to engage in meaning-making activities with their surroundings which may offer numerous potentials for language learning opportunities (van Lier, 2000, 2002, 2004).

This study investigates the off-screen learning behaviors engaged in by three FL students during a synchronous online beginning Japanese class. The class was conducted via audio-conferencing software (*Wimba*, incorporated by the course management platform *Sakai*), so class members' nonverbal cues - such as facial expressions, gazes, and body orientations - and their physical locations are invisible to each other. I address the following research questions: "What are online students' off-screen learning behaviors during class sessions?", "How do the off-screen learning behaviors influence their language learning processes?", and "What kind of affordances and constraints emerge in this online/off-screen course setting?"

To answer the research questions, I approached this study using a unique methodology. I primarily examined two types of video data that were collected and synchronized in a picture-inpicture format. Data included archived online class interactions and three focal students' behaviors that were filmed by the students themselves in their physical locations as they participated in the computer-based beginning Japanese class. The data reveal the students' "behind the scenes" learning behaviors that demonstrate the online students' vigorous, yet exceptionally private, language learning engagements.

In this chapter, I first begin by reviewing previous research on distance education and other studies on technology-enhanced L2 learning that has a bearing on students' off-screen behaviors during online instruction. Then I review the theoretical approach and the ecological and semiotic perspectives on language learning (e.g., Kramsch, 2002; van Lier, 2000, 2002, 2004). This helps me to identify the affordances and constraints that emerged in the students' learning process "from the perspective of the participants in relation to others' perceptions and experiences, and in locally contingent contexts" (Kramsch, 2002, p. 9). Following a description of research design and methods, I discuss findings concerning students' off-screen behaviors in their physical environment and what role engagement in these behaviors played, from the learners' point of view, in their language acquisition process. In conclusion, I argue the importance of examining students' off-screen behaviors during online instructions and the significance of such findings for helping L2/FL researchers and practitioners understand the kinds of affordances learners gain in the language learning process in a multimodal setting.

Literature review

Distance language education

With advances in technology and recognition of societal needs, universities are offering an increasing number of distance language courses. Blake (2009), a leading researcher of online language education, predicts that this trend will continue to grow. Fleming and Hiple (2004) redefined Keegan's (1990) classic definition of distance education as the separation between teacher and student where the communication must be electronically mediated and initiated bidirectionally. However, White (2005, 2006) contends that an adequate definition of distance language learning and teaching must account for pedagogical and human perspectives, reflecting a synthesized view from practitioners, researchers, and learners.

There is a growing body of research on distance language education; however; studies are still limited in number. Earlier studies tended to examine the challenges of developing online courses (e.g., Fleming, Hiple, & Du, 2002; Garing, 2002; Garrido, 2005; Poon, 2003; Strambi and Bouvet, 2003; Wang, 2004), whereas other studies have investigated various topics that focus on shifting teacher roles (Hauk & Stickler, 2006), teacher identity (White, 2007), role of feedback (Rosi-Solé & Truuman, 2005), learner motivation (Hurd, 2006; Ushida, 2005), learner autonomy (Hurd, 2005; White, 1995), and self-monitoring strategies (Chang, 2010). Other research has reported issues related to introducing cultures in online courses (Goodfellow & Lamy, 2009) and urged the reconsideration of the concept of oral competence in the multimodal environment (Lamy, 2004). Still, a great deal of interest remains, leading other researchers to assess distance language courses. Many of these studies have investigated the students' perceptions of the web-based courses and the utility of the tools available through audio- and/or video-conferencing software (e.g., Hampel, 2003; Hample and Hauk, 2004; Hansson & Wennö,

2005; Rosell-Aguilar, 2006; Strambi and Bouvet, 2003; Wang, 2006, 2007; Wang & Chen, 2009; Vonderwell, 2003). These studies have shown the merits of studying a language in virtual environments, but have also identified various challenges.

Additionally, several researchers have concerns about the effectiveness of online/hybrid language courses, compared with F2F classrooms. These studies have shown that the outcomes achieved by online/hybrid students were comparable to those of traditional classroom students. The majority of evaluations were made based on test results in terms of specific linguistic attainment, such as writing ability (Cahill and Cantanzaro, 1997), grammatical accuracy (Blake and Delforge, 2005), oral proficiency (Blake, Wilson, Cetto, & Pardo-Ballester, 2008), and overall skills including listening and reading comprehension (Chenoweth and Murday, 2003; Chenoweth et al., 2006).

These studies not only suggest the benefits and challenges of online learning and teaching and adopting web-based tools in language education, but also help us understand that the course delivery format makes little difference in terms of students' language learning outcomes. However, many of these study findings were based on students' self-reports, student surveys, or L2 test results. Therefore, we know little about students' language acquisition processes, such as what behaviors and activities students engage in while they participate in online courses. Particularly, in online instruction where audio-based conferencing software is used, the students' learning behaviors in their off-screen environment are virtually unknown to researchers because their activities in the physical environment are invisible and inaccessible to anyone but themselves.

Off-screen behaviors around the computer

With the use of technology, L2 learners' online behaviors and activities in the virtual environment have been abundantly documented. Many studies have focused on examining the benefits of language acquisition, particularly documenting students' negotiated interactions employing text-based computer-mediated communication (CMC) (e.g., Abrams, 2003; Blake, 2000; Kötter, 2003; Lai, Fei, & Roots, 2008; Lai & Zhao, 2006; Loewen & Erlam, 2006; Pellettieri, 2000; Sauro, 2009; Sotillo, 2000; Smith, 2004, 2005). More recently, learners' webbased interactions with target language (TL) communities outside of classroom settings have enhanced the students' sociocultural discourse competence (e.g., Belz and Vyatkina, 2005, 2008; Darhower, 2002, 2007; Hanna & de Noohy, 2003; Tudini, 2003, 2007). Significantly, however, although many researchers have documented student learning behaviors in the online environment, very few researchers to date have looked at the off-screen behaviors and activities engaged in by L2 learners in their physical environment while they participate in technologically mediated communication. In one study of this nature, Payne and Whitney (2002) investigated the relationship between L2 learners' oral fluency and text-based CMC. In their qualitative analysis, they showed that most participants using text-based CMC in the experimental situation were conscious of their subvocalization of their own language use during text-chatting. More than 90% of the students either overtly or silently vocalized their compositions, and 50% of the students agreed that they read the others' posted texts aloud. Similarly, Smith and Gorsuch (2004) documented learners' vocalizing their speech in their off-screen environment while engaging in text-based CMC. This suggests that students' off-screen verbal behaviors during online instruction are consequential for learning.

Other studies have looked at the off-screen behaviors and activities engaged in by the L2 learners in their physical environment during technologically mediated communication. For instance, Leahy (2004) and Jeon-Ellis, Debski, & Wigglesworth (2005) examined the collaborative talk by university-level L2 students in their physical environment while they engaged in computer-based tasks. Similarly, Kitade (2008) studied the role of offline collaborative metalinguistic talk engaged in by learners of Japanese while they were composing asynchronous CMC texts. The results showed that the online and offline talk played a distinctive role, in which the latter supported the students' language development. Smith and Gorsuch (2004) also demonstrated a unique approach to data collection. They reported the effective use of a usability lab (UB) to collect English learners' text-based CMC interactions. This system allowed the researchers to audio- and video-record off-screen behaviors of learners in the UB while they engaged in texting. This system also captured the computer screens of learners as they composed text, in addition to sent messages were documented in chat logs. The researchers claimed this data collection method was effective in determining what learners know and attend to while text-chatting, as opposed to relying only on the final product, chat logs. With a similar methodological approach, Smith (2008) examined self-repair behaviors among 46 beginning learners of German in a task-based CMC environment. Using two data sources, he compared the self-repair activities of the same learners working on the same tasks; one was printed chat logs of online interactions and the other was files of video screen captures that recorded all texting behaviors the learners had engaged in while composing texts on the computer. The analysis of both data sources revealed a clear difference in the amount of self-repair engaged in by the same learners. This method has successfully revealed the importance of examining learners' textediting activities rather than relying only the final product (Smith, 2008) and has been applied to

investigations of another linguistic phenomenon (Sauro and Smith, 2010; Sauro, Brunotte, Fujitaki, & Pope, 2011). These investigators suggested that the former data source comprises rich information to help researchers accurately understand the L2 learners' cognitive processes.

The previously described studies demonstrated the beneficial role of off-screen behaviors in which language learners engage in terms of L2 acquisition. In addition, the unique research methods, incorporating observations of learners' off-screen behaviors, help us identify with learners' cognition and other activities during their learning processes, which are normally private and thus unnoticed by others. However, thus far studies of students' off-screen behaviors during online interactions have tended to focus on a relatively limited language acquisition phenomenon. Particularly, no distance education research has taken an analogous methodological approach to understanding students' off-screen learning behaviors while they engage in virtual instruction, invisible to others. The approach in the present study, however, integrates the concept of accounting for learners' off-screen behaviors in their physical environments into the research methodology. This helps us understand the private learning processes and types of affordances the students create during online classes.

Theoretical framework

This study is guided by ecological and semiotic perspectives of language acquisition and learning developed by multiple researchers. Particularly, I closely align with the analogous approaches taken by Kramsch (2002) and van Lier (2000, 2002, 2004).

According to Kramsch (2002), the ecology metaphor appeared in the 1960s in the various disciplines, which include systems theory and cybernetics (Bateson, 1972, 1979), psychology (Gibson, 1979), educational development (Bronfenbrenner, 1979), and linguistics (Haugen, 1972). In recent years, these views have influenced the intention of a few researchers in

the field of language acquisition to explore a new metaphor, "the dynamic parts of a living organism" (p. 3), which examines the complex relationship between learners (living organisms) and their physical and social environments. The metaphor has emerged in response to the necessity of accounting for diverse and conflicting language acquisition phenomena that are produced today's environment of globalization and multilingualism, where the oppositional perspectives, either on linguistic or social structures of language development, cannot account for the language acquisition that we observe. This includes the recent introduction of new language learning contexts, such as multimodal and computer-mediated settings (e.g., Lam & Kramsch, 2003; van Lier, 2003).

The ecological perspective is not considered to be a unitary theoretical approach (Kramsch, 2002; van Lier, 2004); its primary principles are differentiation, diversity, and adaptability, and it considers language development as a complex, nonlinear system (Kramsch, 2002). What unifies this approach is its emphasis on the view of context as socially situated, which researchers in cognitive science tend to take for granted (Bateson, 1972, 1979; Bronfenbrenner, 1979; Haugen, 1972).

The context in ecological research is viewed as an evolving process where learners actively interact with the social environment not only through verbal means, but also with nonverbal resources and artifacts in the surrounding environment (van Lier, 2000, 2002, 2004). The context becomes consequential only when relevant meanings are attached via given actions and language (Bateson, 1979). Unlike the premise that language acquisition occurs primarily in an individual's mind (e.g., Gregg, 1993), the premise of the ecological context is that learners' experiences in the social world influence the development of their cognitive processes (Leather & van Dam, 2003). The learners' activities are considered to be simultaneously socially
constructed and dynamically negotiated in the local context. In addition, according to a phenomenological stance that inspires ecological perspectives (Kramsch, 2002), our knowledge is constructed through a corporeal schema, which enables us to interact with and relate to the world. Moreover, knowledge cannot be dissociated from social and contextual influences because the potential knower defines the relevance of any given phenomenon.

Therefore, this perspective takes a holistic approach to language. That is, language is considered not only in relation to natural surroundings, but also as it relates to "the personal, situational, cultural, and societal factors that collectively shape the production and evolution of language, ontologically as well as phylogenetically" (Kramsch & Steffensen, 2008, p. 18). The holism is characterized by a dialogic perspective on language in a Bakhtinian sense where dialogue is viewed as a "relational principle not only of here-and-now interactions but of human existence per se" (Kramsch & Steffensen, 2008, p. 19).

Using semiotics, van Lier described one of the most important concepts in ecological studies, the mediation process through which language learners interact with their environment, as "the study of sign-making and sign-using practices" (van Lier, 2004, p. 56), a theory developed by Peirce (1998). The important part of Peirce's semiotic system is its three components: Firstness (just what it is with no reference to anything else), Secondness (reaction, relation, change, experience), and Thirdness (mediation, habit, interpretation, communication, and other factors.) (van Lier, 2004, p. 61). This triadic relationship is composed of dynamic routes that constantly and endlessly change and develop through interpretive processes.

According to van Lier (2004), in a language learning context signs are viewed as the relationship of relevance between learners and the world, which comprises physical, social, and cultural facets. Signs are viewed as mediated affordances that begin in a dialogic interaction

between learners and the environment. It is in the environment, encompassing symbolic opportunities for potential meanings, where learners engage in meaning-making activities. Learners are regarded as autonomous entities who possess the authorship of their own actions and speech in to the context that is influenced by their emotions. Autonomy is viewed a social production while, at the same time, it is created and owned by the learners themselves.

Mediation is an open process that offers learners numerous language acquisition possibilities; through mediation, learners are not mere recipients of the knowledge being transmitted. The key notion in the process is "affordances," a term coined by Gibson (1979). He states that affordances are "what [the environment] offers the animal, what it provides or furnishes, either for good or ill" (p. 127), and "they are relationships of possibility, the result of perceiving an object while co-perceiving oneself" (van Lier, 2004, p. 105). Therefore, affordances can only be perceived, related to, noticed, and utilized by learners themselves. Yet, learners' engagement in the processes is "constantly under revision, adjusted and readjusted" (Kramsch, 2002, p. 11). In this sense the process and the direction that learners take during language learning cannot always be predicated or controlled.

The ecological and semiotic approaches view language and language learning as a process of emergence, where learners actively engage in meaning-making activities in the social world. The affordance may emerge in this process as a consequence of their interactions with the physical environment, mediated via symbolic tools.

The ecological and semiotic models are the most suitable approach to analysis of the data on students' off-screen behaviors in a virtual classroom mediated by audio-conferencing software because they "[open] up possibilities of embracing the paradoxes, contradictions, and conflicts inherent in any situation involving semiotic activity" (Kramsch, 2002, p. 23). I align my

theoretical perspective with Kramsch (2002), that the objective of ecological research on language development is to identify and describe the affordances that emerge from these paradoxes in the multimodal setting.

Methods and data analysis

In this study I argue the vital role that students' off-screen behaviors in their physical environment play during online language instruction. It is in this very context where countless potential affordances of language acquisition emerge through the learners' active engagement, using semiotic tools. The purpose of this study is to examine three focal students' off-screen learning behaviors and activities in their private environments and the role they played in the students' language learning processes during computer-based Japanese language instruction. Guided by the ecological and semiotic approaches to language learning, I investigated the affordances and constraints that emerged in the students' off-screen learning environments.

Specifically, I addressed the following questions;

- 1. What are online students' off-screen learning behaviors during class sessions?
- 2. How do the off-screen learning behaviors influence the students' language learning processes?
- 3. What kind of affordances and constraints emerge in the online/off-screen course setting?

This study contributes to an understanding of the nature of online language learning from a learner's perspective. It will give language researchers and practitioners and technologists valuable insights into the online learners' language acquisition process and their mediated activities as they use their resources in the physical environment. For online language educators and researchers I suggest the consideration of the methodological approach taken in this study

for use in future research, as I argue the importance of examining the critical role that the learners' physical/social environments play during virtual language instruction. Additionally, the study may be beneficial by helping language educators who are considering adopting new tools in their classrooms understand the kind of affordances and constraints that students might encounter through their use.

Site and participants

The study site includes two locations: online and off-screen environments. The study was set up in a university-level synchronous online beginning Japanese class. This class was offered along with several additional classroom-based courses. It was designed to teach four basic skills, emphasizing both grammar and communicative aspects of the language. The online courses used web-based learning materials and activities that were specifically developed for the online classes. Unlike classroom-based courses, the online classes are delivered in an electronic format via virtual classroom software, Wimba (Appendix A). The software allows the class participants to communicate with each other via voice and text chats; however, a text component was not included in this study. Talking is accomplished by pressing a talk button. Characterized by Voice over Internet Protocol (VoIP), simultaneous talk by multiple participants is not possible. Therefore, the class participants' off-screen voices and background noises are not audible to the other online participants unless the talk button is activated. This classroom also allows the instructor to project image files, presentations, websites, etc., on a shared e-board, so some visual-based communication is possible. However, because web cameras are not used by individual students, their facial expressions, body movements, and physical environments are invisible to both the instructor and each other.

Class participants were required to meet in the virtual classrooms twice each week during the 17-week semester. Each class lasted 80 minutes, during which the students were required to complete various communicative activities with peers and the instructor via microphones. There was no restriction as to where the students could be physically located during the class, as long as there was a reliable computer and Internet connection. No face-to-face (F2F) instruction was provided in this course.

The participants described in this chapter are three focal students, Soo Yun, Mei, and Josh (pseudonyms), who enrolled in online Elementary Japanese 1001 at Georgia Institute of Technology in Spring semester 2009. All volunteered to participate by filming their off-screen activities at their physical locations during the online classes throughout the semester. Other participants in the study were six additional students (4 female and 5 male) who took the course and the instructor. Except for one graduate student, all students were enrolled in traditional undergraduate programs; none were majoring in Japanese. I taught the course while also acting as a participant observer. I am a Japanese-English bilingual who co-developed and taught the online Japanese courses at the institution for several years.

All focal students attended classes on campus during the same semester that they participated in the virtual classroom from various locations. Although they all came from different backgrounds, there are some similarities among them. They all successfully completed the course even though their prior experience with Japanese and other FL learning was varied. They chose to enroll in this class because the classroom-based courses were full. When I posted my research recruitment flyer, they responded immediately. Despite the demands of research participation, such as handling technical devices, time commitments, and the possible emotional

burden of filming themselves, they all collaborated with me pleasantly. The following descriptions of the focal students are based on the interview data.

Soo Yun was a first year management student. She is originally from South Korea and is a Korean and English bilingual. She had been educated in the United States since she was in the 8th grade. Her father speaks Japanese as a L2, so she was familiar with some Japanese characters and expressions prior to enrolling in the course. She participated in the course mostly from her dormitory room.

Mei was also a management major, but was in her third year. Mei also was bilingual, speaking Chinese as her first language and English as a second language. The majority of Mei's education took place in her home country, mainland China. She started learning English in primary school and continued studying the language until she enrolled in a U.S. university. In junior high school she took a Japanese class that introduced her to popular Japanese culture, which sustained her enthusiasm for the language. During the semester she logged into the virtual classroom from various locations, such as her room, a friend's room, and computer labs on campus. In fact, she was the only student I had ever had in my online course teaching experience who occasionally participated in class from the campus computer lab where I (the instructor) was also present. However, because of the way computers were positioned in the lab, we never talked to each other off-screen during class time.

Josh was a third-year math student, but this was his first semester at the university, just having transferred from another local college. There were some differences between Josh and the other focal students. For instance, he is a Caucasian American who grew up in an Englishspeaking family, and he and his Caucasian American wife speak to each other exclusively in English. He took a few "less advanced" Japanese courses at another college prior to this course

enrollment and had attended a summer abroad program in Japan. In addition, Josh had prior experience taking online courses whereas the other 2 focal students did not. He attended the class from a various locations, including his apartment, the school library, and an on-campus classroom.

The study participants and I, as instructor, maintained a formal relationship throughout the course of the study. Our correspondence about the research was minimal. I brought both emic and etic perspectives to the research, being a participant/instructor of online Japanese language courses and a former online language student myself. My social position as an L2 researcher, educator, and learner, as well as an online Japanese course developer and instructor, influenced the way I perceived the participants' behaviors and enhanced my ability to interpret them.

Data collection

This study collected data from multiple sources. Two primary data sources were the video-recorded online course archives (a total of 27 hours) and the focal students' video-recordings of themselves in their physical off-screen environments (approximately 20 hours for each participant). All recorded video files were converted to file formats that are compatible with *Adobe Premier Pro CS4*, which was used to synchronize the two files. Synchronizing the two sources of video data allowed me to see the students' off-screen behaviors and the online class activities simultaneously in a picture-in-picture format (Appendix B). Other archival data included the course syllabus, lesson plans, learning materials, and the course website. In addition, at three different times during the semester, I collected the students' written reflections on their online learning experiences. At the end of the semester, I gave an anonymous survey to all students enrolled in two sections of the online course (participation was voluntary) and

conducted an interview lasting approximately 45 minutes with each focal student. Throughout the semester I recorded my observations in a journal as I organized the data.

Procedure

I began recording the online classes the first week of the semester using a *Wimba* archival tool that is a built-in feature of the software. The study was announced via email during the third week of the semester, and all students who enrolled in the course agreed to my conducting the research. The students who responded to my recruitment flyer about filming their off-screen activities arranged individually to meet with me on campus. After signing consent forms to participate in the study, they received recording equipment and instructions (Appendix C). By the fifth week of the semester, the focal students were ready to record their off-screen activities. The duration of filming was between 60 and 90 minutes for each class, and the focal students filmed themselves for approximately 10 weeks. However, due to personal, technical, and budgetary limitations, the duration and the condition of each recording were not always uniform or comprehensive; that is, start time, duration, and camera position varied slightly among the participants.

Data Analysis

I followed a qualitative method of data analysis by taking an interpretive and inductive approach (Patton, 2001). Throughout the project I looked for emerging themes from the various data sources. I particularly focused on examining the synchronized video files where the students' learning behaviors in the online and off-screen environments were observed simultaneously (Appendix D). Initially, I viewed each focal student's video files multiple times, taking notes of instances when they engaged in off-screen verbal and nonverbal behaviors. The notes were used throughout the analysis process, which helped me both organize my thoughts

and develop new ideas as they continuously emerged. In addition, I made rough transcriptions of all archived online classroom discourse and the focal students' off-screen behaviors. Then I selected samples of the students' off-screen behaviors based on the emerging themes, which included unclear boundaries between on-task and off-task behaviors, invisibleness of students to the instructor and each other, and how it relates to their increased agency, and students' control of their own environment. I later developed more detailed transcriptions after repeatedly watching the videos. More than 100 pages of detailed transcriptions were analyzed. My notes, observations, interview data, and journals, along with students' essays and other archival data, were also used to place my findings in context. I strengthened the methodologies and the analyses by comparing my developing ideas with various resources separate from the video files. Throughout the analysis, I employed relational and reflexive ways of looking at the data; that is, I paid attention to phenomena that might be otherwise unobserved, and I explicated a spatially and historically contingent process that allowed me, as a researcher, to relate to myself and my environment (Kramsch, 2002, p. 8).

Transcription

The video data was transcribed based on conventions developed by Gail Jefferson (Schegloff 2007) (Appendix E). However, because of the unique qualities of the synchronized data excerpts, I used a 2-column format for the transcripts in order to capture simultaneous actions engaged in by both online and off-screen participants. The actions presented in the same row in different columns show that the activities took place at the same time. The left side of the column describes online classroom interactions and the right side of the column shows the focal student's off-screen verbal and nonverbal behavior in his or her physical environment. English translations of the Japanese utterances are given in italics under the audible utterances.

In the following sections I demonstrate the off-screen learning behaviors engaged in by students in their physical environment while they participated in online language instruction. By so doing, I am able to argue the critical role the learners' off-screen behaviors in their physical environment played during technology-mediated language course instruction; this is the very context where various affordances and constraints emerged through the learners' mediated activities with their private environment. I address the questions, "What are online students' off-screen learning behaviors during class sessions?", "How do the off-screen learning behaviors influence their language learning process?", and "What kind of affordances and constraints emerge in this online/off-screen course setting?"

Findings

The focal students engaged in a variety of activities in their private environments. At first glance it appeared as if the learners were surrounded by many "distractions." For instance, across the video data, food and/or drinks were visible on desks and cellular telephones were sometimes used during class. Occasionally non-class participants shared the space with the students. Soo Yun's roommate and/or friend, for example, were present in the room with the study participant once or twice every two weeks, doing their own work near her. Josh's wife walked into his physical environment approximately once a week. When the focal students were in a campus building, a janitor and a professor accidentally appeared in the video screen a few times. Because there is no defined "classroom space" in their private environments, the students can momentarily walk away from the computer/virtual classroom without being noticed by other class participants. This happened most often when there was no immediate threat of being called by the instructor. Additionally, the computer - the very medium that allows the student to learn the language - invites wide-open access to other virtual worlds. That is, students can interact with

people via email, exchange instant messages, or browse other websites. This phenomenon to a certain extent was reflected in the survey results; 64% of the students (n=14) reported sometimes using email during class throughout the semester, of which 36% reported email use as a habitual activity during classes. The student's polyfocality is not a new phenomenon in the online environment where they rarely focus their attention on one medium or texts; yet multi-tasking is easier to accomplish in online interactions than in F2F interactions (Jones, 2004). Indeed, a similar phenomenon was reported by students in hybrid language classes who engaged in off-tasks in their home environment, such as watching television, emailing, and eating, while text-chatting with classmates (Chenoweth and Murday, 2003).

However, what affordances might emerge in a learning environment like this? Shotter and Newson (1982) state,

the linguistic world in which learners will immerse themselves is "full of demands and requirements, opportunities and limitations, rejections and initiation, ennoblements and constraints – in short, affordances" (p. 34).

Private scaffolding

Scaffolding is a term first introduced by cognitive psychologist Jerome Bruner in the 1950s (Daniels, 1994). It refers to a process that enables a child or novice to accomplish a task beyond his or her range of capacity with the help of a supporting tutor. The process includes recruitment to keep the novice's attention on the task, highlighting the discrepancy between the novice's developing performance and the target one, demonstrating the task procedure, etc. (Wood, Bruner, & Ross, 1976). Scaffolding can happen during a preplanned or contingent situation, as well as somewhere between (van Lier, 2004). I use the term "private scaffolding" to refer to learners' contingent assistance privately given to a peer without being noticed by an instructor or other class members. For example, in Excerpt 1, Soo Yun privately offers assistance to her classmate Ji via instant messaging (IM). This is a contingent response to Ji being called on by the instructor, and Ji needed to respond to the teacher's question in a timely manner. In a classroom-based environment, private communication via technology is normally socially restricted, and there may not even be a need for it if interactants are sitting next to each other. In the online class the student has a choice to send a public text to the student, which is a feature of the software; however, Soo Yun chose to send a private text to her classmate to allow him to save face.

In Excerpt 1, the instructor restates the question to Ji, *sma::ll wa nandesuka* ("what is small"), following his first attempted response that was incorrect (line 1). Ji tries again but the volume is low (line 3). At the same moment in the off-screen environment, Soo Yun, who is a friend of Ji and was his partner in the previous class activity, opens up an IM window, which covers part of the virtual classroom window on her computer screen. A few seconds later the instructor asks Ji to repeat his speech. Responding to the online interaction between the instructor and Ji, Soo Yun, unobserved in the off-screen environment, quickly begins typing a private text (line 5). After a short pause, Ji hesitantly restarts his speech, but his voice is not clearly audible in the online class. There is a 4.4-second pause in the online class (line 10). In the meantime, Soo Yun in the off-screen environment looks at her notebook as if to check the correctness of the answer and finishes typing (line 9). Soo Yun closes the IM window. The online interaction between the instructor and Ji continues. In lines 13 and 14, Ji answers correctly as in *chi::sai konpyu::ta* ('small computer'). After a brief pause the instructor acknowledges his correct response.

Except 1: Soo Yun's private scaffolding via text

T: Teacher

J: Ji, a nominated speaker

1.	Т	sma::ll wa nandesuka <i>"What is small"</i>	
2.		(1.8)	
3.	J	° () kon(pyu:ta)° <i>"com(puter)"</i>	((opens the IM))
4.		(2.9)	
5.	Т	un mo∷ikkai ittekudasai "yeah please say it again"	((types the message quickly))
6.		(1.3)	
7.	J	uh	
8.	Т	[small]	
9.	J	[()] ko(.) "co"	((finishes typing))
10.		(4.4)	((looks down at the notebook and ends
11.			texting))
12.	Т	e::to chotto kikoe[masen] "um I can't hear you"	((the IM window is closed))
13.	J	[chi::]=	
14.		= sai konpyu::ta	
		"small computer"	
15.		(1.0)	
16.	Т	so::desune::: "That's right"	

The excerpt showed that private scaffolding via instant messaging might have saved face for Ji in front of the instructor and other class members, while also building private solidarity between the two students behind the online/public environment where they could not be noticed by other class members. This behavior is similar to passing notes in a traditional sense, but the environment allowed the students to engage in "online whispering."

Similarly, in the following excerpt a non-class member, Josh's wife Kathy, a former Japanese learner, appears in his room while he is participating in an online group activity (Excerpt 2). A non-class member's casual appearance in a traditional classroom-based environment is not allowed; however non-class members are frequently invited into the online students' physical environments. When a student's off-screen learning environment offers such an encounter, it can provide an opportunity for the student to learn by receiving private assistance.

In this Excerpt, Josh is engaged in multiple interactions simultaneously. He engages in a pair activity with his online partner to work on vocabulary. At the same time, in the off-screen environment, Josh invited his wife into his room to reply to text messages that just came in on his cellular telephone. In line 1, Josh responds to his wife's question: *uh*:: *on*::*e* has got the message, and he changes his body alignment with the computer screen. However, 1.5 seconds later Josh says *cheerful party* softly to himself as he gazes at the computer screen, showing that his attention has shifted from his personal talk with his wife to the class activity (line 4). At the same time, it appears that he engages in mental scanning of the Japanese vocabulary for "cheerful party." While Kathy utters something inaudible, in line 8 Josh addresses his language question, how do you say cheerful again?, while looking at his wife. After a brief pause she answers Josh with "nigi:ya:ka::(.) na" ("cheerful") (line 12). Josh repeats the word nigi::ya::ka::: (.) nna ("cheerful") (lines 13-14), and he aligns his body with the computer. She also gives additional linguistic information to help him. In lines 19 and 20, Josh engages in the interaction with the online partner and shares the knowledge that he received via private scaffolding from Kathy, *Isn't cheerful party uh::: nigi:ya::ka::na:: (0.6) pa:rute.*

Excerpt 2: A non-class participant's private scaffolding in Josh's room

J: Josh

K: Kathy (Josh's wife, a former Japanese learner)

((Josh and his partner works
 on the vocabulary activity)) J

((Josh's body aligns with the computer)) uh:: on::e has got the message

3.		\downarrow		(1.5)
4.			J	Cheerful party
5.				((gazes at the computer screen))
6.				(2.8)
7.			Κ	
8.			J	how do you say cheerful again?
9.				((leans his head and neck towards
10.				Kathy))
11.				(1.4)
12.			Κ	nigi:ya:ka::(.) [na
13.			J	[nigi::ya::ka::: (.)
14.				nna
15.				((aligns his body with the computer))
16.			Κ	It's a na adjective
17.				(1.6) ((gazes at the screen))
18.			Κ	I think that's cheerful
19.	J	Isn't cheerful party uh:::		
20.		nigi:ya::ka::na:: (0.6) pa:rute		

Josh was able to learn from his wife, who, although she was not an official participant in the class, conveniently happened to know the language, and he was able to share his newfound knowledge with his online class partner. Later in this sequence, Josh also told his partner the metalinguistic information that he learned from his wife. Additionally, he checks the answer with the instructor, who visited the breakout room, and passed the answer on to her.

The online class format makes it possible for a non-class member to play a unique role in the enrolled student's learning process during class participation. The invisibility of the offscreen environment allows unexpected guest participants to add to students' learning processes. Unlike in a classroom environment where knowledge is centered around the institutional authority (i.e. teacher, textbook, etc.), students are able to access an alternative source of information in their off-screen environment.

As the data demonstrate, "affordances are detected, picked up, and acted upon as part of a person's resonating with, or being in tune with, her or his environment" (van Lier, 2004, p. 91).

With the contingency of his wife's presence in his off-screen environment, Josh perceived her as a resource having knowledge that was relevant to his learning. The affordances emerged as a form of private scaffolding as he acted on and used the opportunity to augment his learning.

Unpredictability / Uncontrollability

When a student is nominated to interact with the instructor in a F2F classroom environment, it is socially appropriate for other students to behave as observers/listeners of the interaction. The teacher-student interaction during class serves to model contextual use of the TL, as an opportunity for noticing linguistic discrepancy, and for giving and receiving feedback, etc. (e.g., Gass, 1997; Long, 1996; Schmidt, 1995; Schmidt & Frota, 1986). However, immersed in her private learning environment, Mei was able to engage in an activity of her own at the same time online class interaction was in progress. This is not a student behavior that is expected or encouraged in the traditional pedagogical context; rather, her actions were mediated based on her emotions, desires, and value judgments (Kramsch, 2002).

In Excerpt 3, Mei's nominated turns were finished in the online environment, where her speech included multiple linguistic errors and disfluency; this was unusual compared with her usual in-class performance. Her dissatisfied feelings toward her own class performance were demonstrated in her gestures. These began at the end of her utterance, as she immediately covered her forehead and eye areas, followed by repeated self-correction, as shown in the excerpt. In line 1, Daniel is the nominated speaker, following Mei's turn. In the off-screen environment, Mei gazes at the model dialogue in a small window that she opened on top of the virtual classroom window. This model dialogue includes the form that she had trouble with in the earlier turn. In lines 3 to 6 the instructor repeats Daniel's response and asks Daniel to initiate a question to his classmate, Robert Field. In the off-screen environment, Mei continues to gaze at

the model dialogue and speaks to herself in a very soft voice, $\circ\circ\circ$ nihongo de na: $n\circ\circ\circ(0.5)$ te *°iimasu(ka)°* ('how is it called in Japanese') (lines 3-5). This speech overlaps with the instructor's online talk. The rest of Mei's off-screen verbal and nonverbal engagement shows her dedication to practicing the specific dialogue. While a long silence occurs in the online class waiting for Daniel to take his turn, in the private environment Mei seems to experience a moment of linguistic noticing (e.g., Schmidt, 1995; Schmidt & Frota, 1986). She says ^ouh:: $sh:::^{\circ}(0.6)$ and taps the desk with her fists a few times in frustration (line 8). In line 9 she utters the form in a sharp, high-pitched voice, nante iimasuka! ("how is it called"), showing her noticing of the target structure. After a brief pause she continues to show her exasperation by blowing her bangs. Mei's nonverbal behaviors clearly show that her concern was about her own lack of understanding of the language, as opposed to the passive behavior that would be expected as she waited for Daniel to speak up. In line 19, Daniel slowly circles the object on the e-board. In the meantime, Mei moves the window with the model dialogue to the center of her computer screen, showing her primary engagement in the model dialogue. She slowly repeats the expression in the off-screen environment, niho:ngo (0.2) de(.) nihongo de nante iimasuka ('how is it called in Japanese, in Japanese?') (lines 17-19). The part of Mei's utterance overlaps with the beginning of Daniel's utterance, *chai::r::*. This overlapped speech demonstrates that her attention is not in the online class. Mei repeats the expression one more time quickly and fluently in her private environment, onihongo de nante iimasukao ("how is it called in Japanese") (line 20). In line 23 she leans her head back and repeats the accurate structure one last time, *nihongo de nante iimasuka* ("how is it called in Japanese"), while Daniel finishes his speech to the class. Mei vigorously engages in her off-screen talk, rehearsing her speech and reinforcing the accurate form by speaking it out loud multiple times. Unseen by online class members, Mei was able to

place a priority on her own learning agenda in the off-screen environment, rather than being a mere listener of others' online performance. The decision was made based on her own desire and judgment. Although such activities in the physical environment were not necessarily planned by the online language teacher or course developer, perceived affordances and learners' engagement with the activity is dependent on each learner's awareness of the surrounding environment. Excerpt 3: Mei's engagement in her own learning task

T: Teacher

D: Daniel Jennings (a nominated speaker)

1. 2.	D	i::nu:: (0.3) tte: (0.4) ii:masu (0.5) <i>"It's called dog"</i>	((gazes at the window with the model dialogue))
3.	Т	soodesunee inu tte iimasu (0.4)	°°°nihongo de na:n°°°
4.		etto jaa jeningus san ee::: =	(0.5)
5.		=fi::rudo- san	te °iimasu(ka)°
6.		ni kiitekudasai	(2.5) ↓
		"That's right. It's called dog. Um Mr. Jennings um please ask Mr.	"What is it called in Japanese."
7		Field."	
/.		(7.6)	
8. 0			\circ un:: sn::: \circ (0.6) ((taps the desk with
9.			fists)) <u>nante</u> iimasuka! "What is it called"
10			$(2 \ 2)$
11			nhe::w ((blows her bangs))
12			(2.3)
13		((Daniel circles chair on e-board))	((moves the window with the mode)
14.			dialogue into the center of the
15.			screen))
16.			(3.6) ((gazes at the model dialogue))
17.			niho:ngo (0.2) de(.) nihongo de
18.			na=
19.	D	chai::r::	=nte iimasuka (2.0)
20.		wa::: (0.4) nihongo:: (.) t(h)e:: nan	°nihongo de nante iimasuka°
21.		ur=	
22.		=>nihongo	((leans her head back))
23.		de< (0.4) na::ntte::: (0.5) i:	nihongo de nante iimasuka
24.		masu ka::	
		"What is chair ur called in	"What is it called in Japanese, in

Japanese, in Japanese?"

Japanese? What is it called in Japanese? What is it called in Japanese?"

The focal students' immersion in their own environments that are invisible to other class members allowed the focal students, particularly Soo Yun and Mei, to engage in frequent verbal practice behaviors in their off-screen environments. This includes imitation of speech after the instructor and classmates, in particular, when speaking new vocabularies, sentences, and dialogues. Ohta (2001) documented a similar phenomenon when he observed student repetition in the form of private speech during classroom-based beginning Japanese courses. Such behavior, quietly talking to oneself, identifies the student's focused engagement with certain linguistic features, following the class lesson as it is intended. Lantolf (2003) believes that an important characteristic of imitation is that it is not a mere repetition of utterances; rather, it is a student's reflection of the speech which signifies learners' creativity and agency. The following excerpts illustrate such reflective linguistic use uttered in a playful manner by one of the focal students in her private environment, although such student behavior in physical locations cannot be completely predicted or controlled by the instructor.

The following excerpt exemplifies Soo Yun's frequent engagement in imitating the instructor's speech in her private environment. Such speech includes the instructor's informal TL use outside the formal course content, such as acknowledgement and feedback, task direction, class management, etc. In Excerpt 4 the teacher addressed a question to Ji in the previous turn. After 3.1 seconds in the online environment (line 1), Ji takes his turn and replies to the question, *so::re?* ("that thing near the listener?"). After a brief pause, in line 4, the instructor acknowledges Ji's accurate speech in a high-pitched voice, $U::\uparrow N so::desune:: SO:RE::$ ("yeah, that's right."). Immediately following the instructor's speech, Soo Yun meticulously shows her

interpretation of the instructor's utterance of approval. Her imitation reflects skillful impersonation of the utterance, including the rising intonation of the first word *un*, a casual expression of yes in Japanese, as in $u::\uparrow n \ so::\circ\circ desu(.)^{\circ\circ}$ ("yeah, that's right."). Yet the ending particle *ne*, which shows the speaker's agreement, was inaudible, possibly because this grammatical feature was not acknowledged by the learner since it had not been previously introduced. As Soo Yun expressed her enthusiasm in "sounding like Japanese speakers" in the after-semester interview data, in the private environment Soo Yun was apprenticing the instructor by imitating her real language use outside of the lesson plan.

Excerpt 4: Soo Yun's imitation of the instructor's speech

T: Teacher

J: Ji (a nominated speaker)

1.		(3.1)	
2.	J	so::re?	
		"That thing near the listener"	
3.		(0.9)	
4.	Т	U::↑N so::desune:: SO:RE::	
5.		(1.1) ((write the word on the board))	u::↑n so::°°desu(.)°°
6.		HAI oka::::y	"Yeah, that is(.)"
		"Yeah, that is right. That thing near the	
		listener. Right, okay."	

While the instructor's speech may be constantly imitated as a model regardless of the pedagogical intention, the following excerpt shows that Soo Yun's playful use of the language extends to one of the classmates' verbal behaviors. In Excerpt 5, in the online environment Soo Yun asks Daniel if the Japanese language is difficult; this interaction is part of the whole-class activity. She gazes at the screen in her off-screen environment as her turn is completed, monitoring the class (lines 1-2). 4.5 seconds later in lines 4 and 7, Daniel slowly begins his answer. He initiates his speech with a false start, *ni::ho::ngo::* ("Japanese"), then after a brief

pause, he repeats the word to restart the sentence, *ni ho::n go:: wa::::* ("As for Japanese"). His speech includes elongation of vowels, marking disfluency. In the off-screen context Soo Yun speaks in Korean to her roommate, who is present in the room. 1.2 seconds later Daniel resumes his speech in the online context (lines 8-9). When he completes the utterance, *mmu::(.) zu::(.) <u>ka</u>:: shi::* ("difficult") and slowly continues with the following syllable *ku:::*, in the off-screen environment Soo Yun begins imitating his speech, *muzukashii:::* ("difficult"), with a small laugh (line 11). After 1.3 seconds G resumes his speech, *a::ri:: ma:: (.)sen huh* ("is not"). In line 15, H quickly imitates his speech, *arimashe:n* ("is not"). She slightly exaggerates an English "r" sound that marks Daniel's accented speech and switches the sound "*sen*" to "*shen*," highlighting the deviancy. Then Soo Yun's laughter is followed by laughter from her roommate in the background.

In college-level courses it is common for students to maintain courtesy and friendly relationships with class members, just as they do in the online environment. However, if an issue emerges in a classroom environment, an instructor is able to detect the problem by observing students' behaviors and quickly act on it. This is different in the online class setting because the instructor cannot take control of an issue that extends to the students' off-screen location, hidden from the teacher's eyes. While the affordance of learners' access to the off-screen environment can bring them numerous potential opportunities for language learning, by the very same token, the solidarity among online language community members can become superficial. Face-threatening activities, similar to a road rage phenomenon, can be pronounced in the learners' off-screen environments, which are beyond instructor/institutional control.

Excerpt 5: Soo Yun's imitation of the classmate's speech

S: Soo Yun

D: Daniel Jennings

1. 2.	S	Jeningus san nihongo wa::: muzu(.) ka(.) shi:(0.1) i::desuka? "Mr. Jennings is Japanese	
		difficult?"	
3.		(4.5)	((gazes at the screen))
4.	D	ni::ho::ngo:: (0.8) ni=	
5.		=ho::n=	
6.		=go::=	
7.		=wa::::	((speaks Korean))
		"Japanese, Japanese is"	
8.		(1.2)	
9.		ama::ri::: (0.4)	
10.		mmu::(.) zu::(.) <u>ka</u> :: shi::	
11.		(0.3) ku:::	muzukashii::: ha
12.		(1.3)	"difficult"
13.		a::ri:: ma:: (.)	
14.		sen huh	
		"not very very difficult"	
15.		(1.0)	arimashe:n haha= "is not very"
16.	Т	HA::I (0.7) $^{\circ\circ}$ oka::y $^{\circ\circ}$ ii=	=haha haha ((simultaneous short laugh
17.		=desune::: "Right. Okay, great."	from the background as well))

Active verbal engagement in a safe environment

In the sequence below, Mei was not a nominated speaker in the online environment, yet she chooses to be an active learner of Japanese in her physical location. In her private environment Mei was able to create an imaginary interlocutor of her own and freely speaks to her/him in Japanese. In Excerpt 6, the whole class is working on an activity to create a verbal sentence based on pictures. The instructor projects pictures on a screen, with each picture representing a component of the sentence such as subject, time, location, and verb. The target sentence can be translated into, *Mr. Smith sleeps at 11:30 pm at home*. The instructor initially gives the subject of the sentence *sumisu san wa* ("as for Mr. Smith"). Then she nominated Laura,

Josh, and Daniel sequentially to each give one part of the sentence in Japanese. After Laura's and Josh's successful completion of the target phrases, in line 1 Daniel also responds correctly, *nne::ma::su* ("goes to bed"). The instructor raises her voice to acknowledge the correct response. In the off-screen environment (line 4) Mei, who has been quietly gazing at the screen, suddenly speaks to her imaginary interlocutor, $Ah:...\uparrow ah\downarrow$ *soodesuka:: soodesuka* ("Oh, oh, I see, I see.").

Excerpt 6: Mei's talk with an imaginary interlocutor

T: Teacher

D: Daniel

1.	D	nne::ma::su ((T begins writing))	
		"Goes to bed."	
2.		(1.0)	
3.	Т	HA::::i soodesune::::	
4.		sumisu-san=	ah::::↑ ah↓ soodesuka::: =
5.			=soodesuka ((picks up a
6.		=wa::: (0.4) go:go::: juu::ichi:ji ha::n	pen and begins writing on
7.		ni::: neamsu >so there is a sentence	note book))
8.		right here<	"oh, oh, I see, I see."
		"Okay, that's right. Mr. Smith goes to bed at	
		eleven thirty pm."	

She demonstrated her understanding of the task by using the TL expressions from the previous lesson. This clearly was not a form of private speech where she utters only to herself in a soft voice without gazing at an interlocutor (Ohta, 2001). Her speech was energetic and confident, and it seemed to be directed to an interlocutor of her own creation, as if she were conversing with an actual Japanese speaker, projecting herself in a "real" social situation. She utilized the TL that her classmates and instructor used in the online environment as a cue to engage in her own off-screen TL learning. She was not required to speak in Japanese because no one was present in her physical environment to evaluate her L2 performance. However, she

actively engaged in her own language learning activity in the location where she felt safe to rehearse and try out the new vocabulary.

In another excerpt, shown below (Excerpt 7), Soo Yun actively engages in othercorrection in her private location while a nominated speaker in class, Daniel, keeps mispronouncing a word, /chiisai/ ("small"). Similar to Mei's directing the speech to her imaginary interlocutor, Soo Yun actively engaged in off-screen other-correction alone in her offscreen environment even though there was no conversant. The affordance of not being heard by anyone in the off-screen environment allowed her to become an active and confident expert; in the off-screen environment, the learner feels safe to fully show her knowledge of the TL as she desires.

Excerpt 7: Soo Yun's other correction as an expert

T: Teacher

D: Daniel

1.	D	Jia san	
		"Ms. Jia."	
2.		(1.9)	
3.	D	koh:: no:: *ki: ssai neko (0.6) wa:::	
		"This small ((incorrect pronunciation)) cat"	
4.	Т	un CHII::SAI	chii:sai
		"Yeah, small"	"Small"
5.	D	<u>da:::</u> re:: no	chii:sai
		"Whose"	"Small"
6.		(0.6)	
7.	D	oh *kiisai=	<u>CHI::</u> sai
8.		=ne::[ko:: wa::	"Small"
		"Oh, small ((incorrect pronunciation)) cat"	
9.	Т	[CHII::sai::	
		"Small"	
10.	D	*kiisai?	
		"*Small ((incorrect pronunciation))?"	
11.		(1.3)	<u>CHII::</u> sai
12.		\downarrow	"Small"

Daniel is a nominated speaker in the online environment. In line 1 Daniel takes his turn by first calling Mei's name. After a brief pause, Daniel initiates his speech (line 3), koh:: no:: *ki: ssai neko (0.6) wa::: ("This small cat"); however, the instructor interrupts because he mispronounces /ki/ for /chi/. As the instructor recasts Daniel's incorrect speech, in the off-screen environment, Soo Yun notices Daniel's mistake. She recasts his speech, *chii:sai* ("small") (line 4). In line 7, Daniel continues his speech without noticing the feedback due to the delay inherent in online communication. This speech overlaps with Soo Yun's additional correction, *chii:sai* ("small") (line 5) even when the instructor does not attend to Daniel's speech. Then, in line 7, Daniel quickly repeats himself, noticing something was wrong, and states oh *kiisai ne::ko:: wa:: ("Oh small cat"); however, the mistake was not corrected. In the off-screen context, Soo Yun exaggerates the sound /chi/ and repeats the correction even before the instructor speaks, *CHI::sai* ('small'). She gazes directly at the computer, speaking loudly with self-confidence. The teacher also does not wait for Daniel's speech to be completed and recasts one more time in a high-pitched voice, CHII::sai:: ("small"), which overlaps with Daniel's speech. In line 10, without noticing the correction, Daniel repeats the same word inaccurately with a rising intonation. This intonation indicates his incomprehension and invites additional feedback. In the meantime (line 11), Soo Yun repeats the same word by highlighting the sound /chi/, CHII::sai ("small") in an exaggerated tone of voice.

The above excerpts showed the focal students' active engagement with language learning even when there is no interlocutor to converse with in the off-screen environment. The learners' constant off-screen verbal behaviors in a multimodal environment repudiate the idea that "the operational matrix for language acquisition is a conversation between two speaker-hearers," a traditional second language acquisition (SLA) assumption (Leather & van Dam, 2003, p. 12).

Even when the focal students were not nominated speakers in the online environment, not only did they observe the interaction, but they also actively attended to the online class through noticing, perceiving, and interpreting to create learning opportunities of their own. The off-screen environment, viewed as a safe place, was a perfect location to speak out the TL without pressure or evaluation by others. In addition, the environment was utilized as a socially situated place where learners can project their future identity as a competent TL user.

Conclusion and discussion

This study discusses the vital role that the focal students' physical environments played in their Japanese language learning during the online instruction. Various affordances and constraints emerged as the focal students actively engaged in their language learning behaviors in their physical environment. These include 1) the focal students providing private scaffolding via technology, 2) the focal students receiving private scaffolding from a non-class participant, 3) their off-screen learning behaviors showing facets that are unpredictable and uncontrollable by instructors and their pedagogical plan, and 4) their active verbal engagement in the off-screen environment when their physical location was perceived as safe. Although at a glance some offscreen engagements might be viewed as irrelevant to language acquisition from a teacher's perspective, further inspection provides another perspective on what online language learning might entail in a course setting using audio-conferencing software.

This analysis showed how learners make use of various affordances unique to the online learning environment where they simultaneously present in both online/classroom and offscreen/private environments. What the learning potential may be in such a learning environment is to a large extent dependent on each learner, who creates and enhances his or her own learning potentials by actively perceiving, interpreting, and engaging with the physical environment, as

suggested in the ecological perspective on language learning (e.g., van Lier, 2000, 2002, 2004). For instance, with the help of technology, Soo Yun was able to preserve her classmate's face during class by sending him the correct response via a private instant message. During the pair activity, Josh made use of scaffolding provided by his wife, who happened to be in his room. The same tools, such as cellular telephones and IM, that might appear irrelevant to learning in one context played a different role in another context (Kramsch, 2002). Soo Yun actively finds the perfect moment to reflect on the teacher's TL use by imitating her; she was a diligent apprentice in her private environment. Mei benefited from being in a safe environment where she could practice her TL use by talking to an imaginary interlocutor. In the private environment, she acted as a competent TL speaker as she desired, since no one could hear or evaluate her language use. These examples show how the affordances uniquely emerged in the students' private environments in multiple timescales, reflecting their multiple identities (Lemke, 2002). It appears that not only did the students engage in their language use for the immediate purpose, but also as a reflection of their past learning experiences. At the same time, they projected their future image of themselves as competent Japanese speakers.

In contrast, Soo Yun's playful imitation of her peer's speech may remind us that the instructor's control cannot extend to the off-screen environment. In fact, face-threatening activities, such as softly laughing at another's performance, were noted among learners' in their private environments during every class, while such activities were absent from online discourse. Although the literature repeatedly suggests that learners' anxiety about making mistakes is reduced in the online environment because others are not physically present (e.g., Chun, 1994; Kötter, 2001; Payne, 2004; Roed, 2003), there is a possibility the co-participants in online classes may be responding unexpectedly negatively in the off-screen environment. This may be partly

explained by the weakened sensitivity of social presence (Wood & Smith, 2005) perceived by the online participants. As Kramsch (2002) maintains, the social worlds mediated by humans are not free from their emotions, desires, and value judgments, which can cause unpredictability regardless of the learning context.

In terms of technology-based education, there were commonly observed occasions in which the focal students, particularly Soo Yun and Josh, engaged in obvious "off-task" behaviors, including having food and drinks, interacting with a non-class participant, surfing unrelated materials on the Internet, checking emails, and using cellular telephones during class time. Clearly, this study reinforced the notion that the off-screen environment is a private space beyond the teacher's view.

It cannot be denied that the success of distance education is not easily achieved because a large part of learning is in the hands of the individual learners themselves, as the early studies of learner autonomy suggests (Hurd, 2005). Additionally, the results of the present study highlight the point made by White (2006) that the main issue with online courses is the physical absence of the teacher's immediate guidance. Such guidance may include not only facilitating the student language learning process, but also supervising, directing, and managing their progression. The high dropout rate of online classes suggested in the literature (Dreyer, Bangeni, & Nel, 2005) and reported anecdotally may be explained by the fact that some students may be less suited than others for learning in this environment because sustaining learning in the absence of institutional control requires a great deal of self-discipline and self-determination. This paradigm was well-expressed by Soo Yun, who described convenience as an advantage of online courses, whereas she described the requirement for strong self-control because of distractions in the physical surroundings as a disadvantage. For better or worse, it is the student who individually defines

and shapes his or her learning environment. Above all, the focal students showed evidence of affordances and constraints in the online learning process that are uniquely created and adopted.

The ecological and semiotic perspectives applied in this study allowed me to investigate the potential for online language learning in such a course setting, an environment that previously had not been explored and described. In terms of study implications, the research methodology revealed that rich information about the learners' learning behaviors and processes can be obtained by looking at the "other side" of the online learning environment. While the researcher has relatively easy access to online data, it is important to include the off-screen component of the learning context in order to understand what shapes the student's learning at the micro and macro levels (Garcia, Standlee, Bechkoff, & Cui, 2009). In online language course research comparing course delivery formats (i.e., classroom versus online), examination of students' learning outcomes alone negates the importance of the learning process. Without adequately considering the learners' learning environments, including the off-screen context, such outcome comparisons are not equivalent. Considering online language education, it would be productive to examine not only what appears as the immediate benefit of technology, but also the kinds of affordances and constraints that might be created by users with the given technology. I agree with White (2005, 2006) that such examination should be multidimensional, valuing the experiences from varied perspectives (i.e., the learner, the teacher, and the researchers). From an online teacher's perspective, study findings also may be useful for students to raise their awareness of the nature of online learning and what it might entail so they can better prepare themselves for their learning.

As more and more language classes are beginning to be taught online, it is becoming increasingly important for our profession to conduct research and publish our findings on what

does and does not work in the online environment. We know that technology will continue to advance at a steady rate. While we can expect that some of these gains will translate into better online teaching tools, we in the SLA profession need to ensure that technology does not enter our classrooms purely for the sake of being newer, faster, or more attractive. Rather, we need to advocate for technology that has a sound pedagogical merit.

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CHAPTER 5

FOREIGN LANGUAGE LEARNERS' OFF-SCREEN CORRECTION BEHAVIORS DURING SYNCHRONOUS COMPUTER-BASED INSTRUCTION³

³ Satomi Suzuki, et al. To be submitted to *Applied Linguistics*.

Abstract

Numerous studies have examined teachers' correction in response to students' linguistic errors in second language classrooms (e.g., Ammar & Spada, 2006; Ellis and Sheen, 2006; Hellermann, 2003; Kasper, 1985; Lyster, 1998; Lyster and Ranta, 1997; Mackey, 2006; Markee, 2000; Panova & Lyster, 2002; Seedhouse, 2004). Typically these studies have targeted the students' linguistic errors in teacher-student interactions. However, few studies have looked at students' self-initiated correction in a classroom environment. In addition, very little is known about the behaviors of students who observe the error corrections in a classroom setting. In the context of online language instruction, much attention has been paid to the students' "online" learning and verbal engagements, whereas their "off-screen" behaviors in their physical environments have been rarely documented (see Definitions). This paper examined two focal students' off-screen self- and other-correction behaviors in their physical environments, and how their opportunities for target language use were created in this course setting. I argue the critical role that the physical environments played in the focal students' learning processes. The findings suggest that the focal students had distinctively different opportunities for target language use in online versus off-screen environments. Whereas the online classroom setting limited their engagement in the target language use because of their highly developed second language performance, in the off-screen environment the focal students took an active role in monitoring their own and others' linguistic usage privately through online discourse. Their off-screen activities became most evident when online nominated speakers did not promptly take speakership, showed disfluency, and made linguistic errors. The discourse environment and the online class setting created a unique opportunity for the focal students to take their private turns.

Corrections of learners' linguistic errors are considered as one of the key components in understanding second language acquisition (SLA). Many second language (L2) studies focused on examining the teacher's correction from various perspectives. For instance, SLA cognitive interactionists have investigated the beneficial role of teachers' corrective feedback in L2 classrooms (e.g., Ammar & Spada, 2006; Ellis and Sheen, 2006; Lyster, 1998; Lyster and Ranta, 1997; Mackey, 2006; Panova & Lyster, 2002). In addition, using the conversation analysis (CA) framework, teachers' correction has been looked at as part of interactional behaviors where classroom talk is considered to be socially created, interpreted, and accomplished by turn-by-turn interaction between the conversational participants (e.g., Kasper, 1985; Hellermann, 2003; Markee, 2000; Seedhouse, 2004). These studies have shown ample evidence that teachers' correction in response to students' linguistic errors in L2 classrooms is ubiquitous. However, few studies have looked at students' self-initiated correction in a classroom environment. Prior studies conducted in this setting have typically targeted students who are frequently verbally active during teacher-student interactions. In contrast, the majority of the students are, in fact, not nominated to participate in talk at all during the teacher-student conversation; instead, they act as observers. Therefore, we know very little about the behaviors of these observers/students because of their limited role in L2 classroom research.

In distance education where classes are conducted through audio-based conferencing software (i.e., *Wimba*) without a web camera, there are numerous unknowns about the class participants' learning processes and their off-screen behaviors because their off-screen environments are invisible to the instructor and each other. White (2006) states that what makes the distance language learning unique yet challenging is the fact that the teacher is absent in the students' physical locations and therefore not available to assist and guide them. However, in

previous studies, researchers have been primarily interested in course assessment in terms of students' perceptions and tool utility (Hampel, 2003; Hample and Hauk, 2004; Hansson & Wennö, 2005; Rosell-Aguilar, 2006; Strambi and Bouvet, 2003; Vonderwell, 2003) and their learning outcomes compared with those of students in face-to-face (F2F) classroom settings (e.g., Blake and Delforge, 2005, 2007; Blake, Wilson, Cetto, & Pardo-Ballester, 2008; Cahill and Cantanzaro, 1997; Chenoweth and Murday, 2003; Chenoweth, Ushida, & Murday, 2006). In addition, research in computer-mediated communication (CMC) abundantly examined the learners' online behaviors during text-based interactions (e.g., Abrams, 2003; Beauvois, 1992, 1997; Belz, 2003; Chun, 1994; Hudson & Bruckman, 2002; Kern, 1995; Lai, Fei, & Roots, 2008; Lai & Zhao, 2006; Loewen & Erlam, 2006; Muller-Hartmann, 2000; Pellettieri, 2000; Smith, 2004, 2005; Tudini, 2003, 2007; Warschauer, 1996), but surprisingly very few researchers to date paid attention to the learners' off-screen behaviors in their physical environments while they engage in online language instruction (e.g., Sauro and Smith, 2010; Smith, 2008; Smith & Gorsuch, 2004).

This study, however, took a very distinctive methodological approach that incorporates data from the learners' physical environments into the analysis in order to provide a better picture of students' correction behaviors during online language instruction. This course was taught in a virtual environment where classroom discourse is mediated via audio-based conferencing software (*Wimba*, incorporated by the course management platform *Sakai*); therefore, class members' facial expressions, gazes, body orientations, and physical locations are not visible to other online members. The course setting is unique because learners are situated in both an online/virtual and off-screen/ physical (see Definitions) context simultaneously whereas the participants' behaviors in the physical environment are invisible to others thus can be kept

private to the participants themselves. In this study I argue the critical role that learners' physical environments played in their learning processes while some students were forced to take an observer role during online teacher-student interactions due to software features. This research site has been overlooked by researchers and practitioners even though it offers numerous potentials for understanding learners' language acquisition behaviors in a virtual classroom context. Specifically, this study examines off-screen self- and other-correction behaviors that two focal students initiated in their physical environments while they were observing online interactions between the teacher and a nominated speaker. While nominated speaker is vocally active in the online environment, the majority of the class members including the focal students are forced to take an observer role. Such conversation observers in a classroom generally play a passive role in SLA research and their correction behaviors are unknown to us. However, guided by CA for SLA framework (e.g., Kasper, 2009; Markee, 2000), I address the questions, "What kind of correction behaviors were initiated by the learners themselves in the online/off-screen learning environment?" and "What role do the students' off-screen behaviors play in their learning process?" CA involves the order and organization of social action found in mundane interactions between members of society (Psathas, 1995). This approach (Seedhouse, 2004) helps me identify the interactional organization from the emic perspective and trace the course of action oriented by the participants on a moment-by-moment basis during interactions.

In order to integrate both online and off-screen components of students' behaviors, I adopted a unique methodology in this study. I primarily examined two types of video data that were collected and synchronized in a picture-in-picture format, 1) archived online class interactions and 2) recordings of two focal students' behaviors that were filmed by the students themselves in their physical locations as they participated in the computer-based beginning

Japanese class. The data reveal the students' "behind the scenes" learning behaviors that demonstrate the online students' vigorous, yet exceptionally private, language learning engagements.

In this chapter, I begin by reviewing classroom discourse studies on correction in a second language learning context. I will focus on the literature on correction behaviors from the SLA cognitive interactionist and CA perspectives because they both extensively explored correction behaviors in language classrooms and contributed to the understanding of classroom practice and discourse. I then review studies on distance language education and a limited number of studies that examined learners' verbal behaviors in the off-screen environment. These studies inspired the development of my research methodology. Next, because it is used as a theoretical framework in this study, I review the research on CA for SLA. Following the description of research design and methods, I discuss the study findings by addressing the questions, "What kind of correction behaviors were initiated by the learners themselves in the off-screen learning environment?", and "What role do the students' off-screen behaviors play in their learning processes?" In so doing, I assert the importance of examining the students' physical environments during web-based language instruction; this is the environment where learners' active engagements and initiations with self- and other-correction behaviors were observed. Learners' agency and autonomy were enhanced in this course setting, free from a controlled environment. I conclude this paper with a discussion of implications for L2 instruction in an online environment.

Literature review

Correction in second language classrooms

Corrections of linguistic errors are treated as one of the fundamental components of SLA. However, such corrections in classroom settings are primarily initiated and led by instructors. SLA cognitive interactionists' examinations of teachers' corrective activities during classroom interactions suggest a beneficial role of such correction for language acquisition (e.g., Long, 1996; Gass, 1997; Lyster & Ranta, 1997; Lyster, 2007; Ortega, 2009). The theoretical premise based on the Interaction Hypothesis (Long, 1996) is that corrective feedback given upon learners' linguistic errors triggers as a noticing moment for the learners, allowing them to restructure their current linguistic level. The foci of these studies include frequency, types, and effectiveness of corrective feedback, as well as the learner's response to feedback. In terms of frequency, a lesser amount of correction in meaning-based classes, such as in an immersion context, has been reported (e.g., Lyster & Mori, 2006), whereas the result was reversed in formfocused foreign language (FL) or L2 classrooms (e.g., Loewen & Philp, 2006; Sheen, 2004, 2006). Several types of teacher correction have been identified, such as explicit, recasts, metalinguistic, and clarification requests (Lyster & Ranta, 1997). Among these types, their effectiveness has been the main issue; particularly, recasts are considered to be the most frequently used feedback type regardless of the instructional context (Lyster, 2007). The effectiveness of recasting is most frequently compared with that of other types of correction due to ambiguity in terms of degree of saliency (e.g., Ammar & Spada, 2006; Ellis and Sheen, 2006; Lyster, 1998; Panova & Lyster, 2002,); however, findings of effectiveness have been inconclusive. Generally, prior research suggests that more explicit means of correction result in a greater linguistic gain than that achieved through implicit feedback (Norris & Ortega, 2000).

Teacher's correction behaviors have generated great interest among CA researchers as a third-turn position, commonly observed in the initiation-response-feedback/evaluation sequence (Mehan, 1985; Sinclair & Coulthard, 1975) where teachers evaluate students' knowledge by asking a known question. The approach originates in ordinary talk as part of repair organization, which has two components: the repair initiation and the outcome. It can be initiated as self-repair or other-repair, and repair action can be accomplished by either the original speaker or the other speaker. It is used to correct interactional problems, such as mishearing, misspeaking, and misunderstanding (Schegloff, 1992; Schegloff, Jefferson, & Sacks, 1977). Self-initiated selfcompletion is preferred (Schegloff et al., 1977). The phenomenon can be observed not only in an ordinary talk but also in both first language (L1) and L2 pedagogical settings. Some researchers assert that a repair sequence can be initiated in response to a learner's error as a trouble source (e.g., Jung, 1999; Kasper, 1985; Liebscher & Dailey-O'Cain, 2003; McHoul, 1990; Markee, 2000; Seedhouse, 2004, 2007). These studies have shown clear differences in the repair preference between ordinary conversation and institutional conversation. For instance, in a L1 classroom, McHoul (1990) suggested that teachers prefer other-initiated self-repair, where the teacher's cluing is frequently used to invite learners' self-correction. L2 classroom studies have shown that repair activities are sensitive to instructional contexts due to power distance between the instructor and the student. For example, Markee (2000) showed a contrastive relationship between repair activities during equal (peer) versus unequal (teacher-fronted) interactions in L2 classrooms. When the instructor was involved, the learners preferred teacher repair rather than self-repair. Seedhouse (2004) suggested there is a reflexive relationship between the pedagogical focus and the repair organization. In his study, repair is primarily initiated by the teacher, which leads to the students' self repair in form-and-accuracy classroom contexts. Kasper (1985) agreed

with the finding that learners' self-initiated self-repair is uncommon in this instructional context. In contrast, in the meaning-and-fluency context, communication is emphasized over explicit error correction. Koshik (2002) focused on teachers' correction behaviors as part of instructional strategies. She investigated one-on-one conferences on L2 writing between a teacher and a student where the instructor effectively utilizes Designedly Incomplete Utterance (DIU). This is a turn specifically designed to be incomplete in order to elicit the learner's display of knowledge in response to his or her error. In a study of L2 pre-primary education classroom in Finland, Vehkakoski (2010) found that teacher-initiated correction was kept minimal, even though the instructors were sensitive to the types of errors made by the children.

These studies reinforced the common practice of teachers' correction in response to students' linguistic errors in a L2/FL classroom. They helped us understand the beneficial role of teacher correction from the pedagogical point of view. In addition, differences in repair organization between pedagogical and ordinary talk became clear when the conversants, regardless of their language status, are sensitive to the interactional and social context. However, the majority of studies focused on teacher-initiated correction; students' self-initiated correction in a classroom environment has not been widely explored in the field. In addition, the typical study setting in this kind of research targets classroom students who are verbally active during interactions. However, the majority of the students, in fact, in a classroom setting are usually not given ample opportunities to verbally participate in teacher-student interactions. Thus they remain untargeted as research participants because they are not (either self- or other-) nominated speakers. Therefore, behaviors of class members who observe and/or listen to the L2 interactions in classrooms are virtually unknown.

Distance language education

With advances in technology and recognition of societal needs, universities are offering an increasing number of distance language courses. Blake (2009), a leading researcher of online language education, predicts that this trend will continue to grow. Fleming and Hiple (2004) redefined Keegan's (1990) classic definition of distance education as the separation between teacher and student where the communication must be electronically mediated and initiated bidirectionally. However, White (2005, 2006) contends that an adequate definition of distance language learning and teaching must account for pedagogical and human perspectives, reflecting a synthesized view from practitioners, researchers, and learners.

There is a growing body of research on distance language education; however; studies are still limited in number. Earlier studies tended to examine the challenges of developing online courses (e.g., Fleming, Hiple, & Du, 2002; Garing, 2002; Garrido, 2005; Poon, 2003; Strambi and Bouvet, 2003; Wang, 2004), whereas other studies have investigated various topics that focus on shifting teacher roles (Hauk & Stickler, 2006), teacher identity (White, 2007), role of feedback (Rosi-Solé & Truuman, 2005), learner motivation (Hurd, 2006; Ushida, 2005), learner autonomy (Hurd, 2005; White, 1995), and self-monitoring strategies (Chang, 2010). Other research has reported issues related to introducing cultures in online courses (Goodfellow & Lamy, 2009) and urged the reconsideration of the concept of oral competence in the multimodal environment (Lamy, 2004). Still, a great deal of interest remains, leading other researchers to assess distance language courses. Many of these studies have investigated the students' perceptions of the web-based courses and the utility of the tools available through audio- and/or video-conferencing software (e.g., Hampel, 2003; Hample and Hauk, 2004; Hansson & Wennö, 2005; Rosell-Aguilar, 2006; Strambi and Bouvet, 2003; Wang, 2006, 2007; Wang & Chen, 2009;

Vonderwell, 2003). These studies have shown the merits of studying a language in virtual environments, but have also identified various challenges.

Additionally, several researchers have concerns about the effectiveness of online/hybrid language courses, compared with F2F classrooms. These studies have shown that the outcomes achieved by online/hybrid students were comparable to those of traditional classroom students. The majority of evaluations were made based on test results in terms of specific linguistic attainment, such as writing ability (Cahill and Cantanzaro, 1997), grammatical accuracy (Blake and Delforge, 2005), oral proficiency (Blake et al., 2008), and overall skills including listening and reading comprehension (Chenoweth and Murday, 2003; Chenoweth et al., 2006).

These studies not only suggest the benefits and challenges of online learning and teaching and adopting web-based tools in language education, but also help us understand that the course delivery format makes little difference in terms of students' language learning outcomes. However, many of these study findings were based on students' self-reports, student surveys, or L2 test results. Therefore, we know little about students' language acquisition processes, such as what behaviors and activities students engage in while they participate in online courses. Particularly, in online instruction where audio-based conferencing software is used, the students' learning behaviors in their off-screen environment are virtually unknown to researchers because their activities in the physical environment are invisible and inaccessible to anyone but themselves.

Off-screen behaviors around the computer: The invisible side of "online" learning environments

Although many researchers have paid attention to student learning activities in the online environment (e.g., Abrams, 2003; Blake, 2005; Loewen & Erlam, 2006; Pellettieri, 2000; Sotillo, 2005; Smith, 2004; Tudini, 2003, 2007; Warschauer, 1996), surprisingly few researchers have looked at off-screen behaviors and activities engaged in by L2 learners in their physical environments while they participate in technologically mediated communication. In one study of this nature, Payne and Whitney (2002) investigated the relationship between L2 learners' oral fluency and text-based CMC. Through qualitative analysis, they found that most participants in the experimental situation using text-based CMC were conscious of their subvocalization of their own language use during text-chatting. More than 90% of these students either overtly or silently vocalized their compositions, and 50% reported that they read the others' posted texts aloud. Similarly, Smith and Gorsuch (2004) documented learners' vocalizing their speech in their offscreen environments while engaging in text-based CMC. This suggests that students' off-screen behaviors during online instruction are consequential for learning. Furthermore, other researchers (Jeon-Ellis, Debski, & Wigglesworth, 2005; Kitade, 2008; Leahy, 2004) examined off-screen collaborative talk by L2 learners as they engaged in technology-based tasks, showing the significant role it played in their learning. Some researchers have used innovative data collection methods to compare students' linguistic usage from two data sources: one was printed chat logs of online interactions and the other was video screen-captured file, which recorded all texting behaviors that the learners had engaged in while composing texts on the computer. This method has successfully revealed the importance of examining the learners' text-editing activities rather than relying on only the final product (Sauro and Smith, 2010; Smith, 2008). They suggested that the off-screen data source comprises rich information that can help researchers and practitioners more accurately understand the L2 learners' cognitive processes.

The previously mentioned studies demonstrated that the off-screen behaviors engaged in by learners' during technology-mediated interactions are beneficial and consequential for their language learning. In addition, the methodological approach appears to be effective in examining

learners' off-screen behaviors that are normally overlooked by researchers. However, thus far studies of students' off-screen behaviors during online interactions have tended to focus on relatively limited SLA phenomena. Particularly, no distance education research has taken an analogous method to understanding the learner's off-screen learning behaviors while they engage in the course. The current study, in contrast, addresses this issue by incorporating the learners' physical environments as a research site in order to reveal the students' learning behaviors, particularly student-initiated correction behaviors, which have been previously understudied.

Conversation analysis

In this study I used methods drawn from CA to analyze the data. CA examines the order and organization of social action in mundane interactions engaged in by members of society (Psathas, 1995). According to Hutchby and Wooffitt (1998), the primary goal of CA is to investigate the organization of social activities in what Schegloff called *talk-in-interaction* (Have, 1999). This is characterized by the interactional organization that is created, interpreted, and accomplished by the participants. CA aims to find evidence of accomplishment of intersubjectivity related to how participants oriented themselves to the progress of the interaction during the sequence of actions (Seedhouse, 2004). Interactions that occur in a social setting are considered as institutional talk, taking on a special turn-taking organization (Heritage, 1997, 2005). This talk is characterized by asymmetric turn-taking allocation, goal-oriented direction to the business at hand, and interactional constraints relevant to their institutional identity and hierarchy.

In terms of CA for SLA, research has reanalyzed the language learners' interactions with different foci from those using the mainstream SLA method (e.g., Firth and Wagner, 1997, 2007). This framework is approached from an emic perspective through the use of

methodological tools such as turn-taking, sequence organization, and repair (e.g., Schegloff et al., 1977). Interactions are viewed as social and collaborative activities regardless of the interactants' linguistic statuses, where learners' identities intermingle with and are shaped by external factors but are still sensitive to the local context (Mori, 2007). As opposed to highlighting the deficiencies of language learners, the researchers view the learners as active participants of interactions who possess interactional resources and knowledge (Firth and Wagner, 1997; 2007). In this framework, cognition is considered to be socially shared and embedded in interaction processes (Schegloff, 1991) as demonstrated in the L2 learning environment (e.g., Kapser, 2009; Markee, 2008; Markee and Seo, 2009; Mori and Hasegawa, 2009). In addition, definitions of research sites have been expanded to include those outside of the classroom context, such as workplaces (Firth, 2009).

In this study, my analysis was guided by the approach to L2 learning by CA for SLA researchers (e.g., Kasper, 2009; Markee, 2000). That is, language learning is considered as a social phenomenon where cognition is available through social interactions. During the interactions the learners orient to discourse and situated identities which are negotiated on a moment-by-moment basis. The classroom interaction is viewed as a variety of institutional talk where social settings shape or constrain interactional phenomena.

Methods and data analysis

In this paper I argue the importance of including students' physical environments as a research site to allow examination of potentials for language acquisition opportunities that may be unveiled even when the students are not verbally active in the online environment during computer-based instruction. This might help us understand unseen learning behaviors that students engage in off-screen that gives distinctively different view of those that are visible to

researchers and practitioners in the online environment. Yet thus far, students' engagements in their private environment during online instruction have been exclusively under-examined. The focus of the study is on the investigation of two focal students' off-screen self- and otherinitiated correction behaviors in their physical environments when they are not nominated speakers. Therefore, they were not verbally active in the online environment. Guided by a CA for SLA framework (e.g., Kasper, 2009; Markee, 2000), the study addresses the questions, "What kind of correction behaviors were initiated by the learners themselves in the online/off-screen learning environment?" and "What role did the learners' physical environments play in the online/off-screen course setting?"

In this paper, I use the term correction to refer to a corrective response to a perceived linguistic error. I view correction as a learner's response to his or her own and others' target language (TL) use, which reflects the learner's own decision as to what the ideal TL form should be. I treat correction differently than repair. Repair refers to part of interactional organization used in CA, a process to deal with interactional problems caused by mishearing, misspeaking, and misunderstanding, independent of the linguistic mistake.

The study is significant because of its innovative approach to the methodology, which incorporated learners' physical environments into the study site. It provides rich information about the students' learning processes by helping us understand what role physical environments play in the students' learning processes in a course setting where audio-conferencing software is used. Findings are significant for consideration by SLA researchers in classroom discourse, not only that involving teachers' correction, but also how student-initiated correction is fruitful in understanding language development. The findings also demonstrate evidence that interactions with learners with lower language proficiency in an online instructional context might provide a

further benefit for some students. Additionally, the study contributes to an understanding of the importance of learners' active engagement in class even when they may appear to be mere observers.

Research design and methods

Setting

The setting for this study contains two components: online and off-screen environments. The study was set up in a university-level synchronous online Elementary Japanese I class offered at the Georgia Institute of Technology in Spring 2009. This class was offered along with several same-level classroom-based Japanese courses. The content of the online class is equivalent to that in the classroom-based courses, and is designed to teach four basic skills emphasizing both grammar and communicative aspects of the language. The online courses used web-based learning materials and computer-mediated language learning activities that were specifically developed for the online classes. Courses are delivered in an electronic format via virtual classroom software, Wimba (Appendix A). The software allows the class participants to communicate with each other synchronously (real-time) via voice and text chat; however, in this study the text component was not included in the data analysis. Talking is accomplished by pressing a talk button. A characteristic of Voice over Internet Protocol (VoIP) is that simultaneous talk by multiple participants is not possible. Therefore, a class participant's offscreen voice and background noises are not audible to online participants unless the talk button is activated by the participant. The online classroom software also allows the instructor to project image files, presentations, websites, and other learning aids on a shared e-board. Therefore, some visual-based communication is possible, even though web cameras are not used to project the online participants' faces and their physical environments.

The class participants are required to meet in the virtual classrooms twice a week during the 17-week semester. Each class lasted for 80 minutes, during which the students were required to complete various communicative activities with peers and the instructor via microphones. There was no restriction as to where the students could be physically located during the class as long as there was a reliable computer and Internet connection. The study setting included the focal students' off-screen environments in their physical locations at the time they participated in the online classes. No face-to-face instruction was provided in this course.

Participants

Two focal students, Soo Yun and Mei, volunteered to participate by filming their offscreen behaviors and activities at their physical locations during the online classes throughout the semester. In addition to Soo Yun and Mei, the participants in the study included seven other students (4 female and 5 male) who took the course and the instructor/researcher. Except for one graduate student, all were enrolled in traditional undergraduate programs. None of the students were majoring in Japanese. I (the instructor/researcher) am a Japanese-English bilingual who codeveloped and taught the online Japanese courses at the institution for several years.

There were some similarities and differences between the two focal students. They both successfully completed the course. According to the after-the-semester interview data, they chose to take the online course because the face-to-face classes were full. Both of them were business management majors in the institution at the time the data were collected; Soo Yun was a first-year and Mei was a third-year student. They were both fluent in English as a L2. Soo Yun spoke Korean and Mei spoke Chinese as first languages. Having an interest in the Japanese language and culture, they were already familiar with some Japanese characters prior to enrolling in the course. During the semester, Soo Yun participated in class mostly from her dormitory

room, whereas Mei participated in the virtual class from various locations such as her dormitory room, a friend's room, and computer labs. In fact, Mei was the only student I ever had in my online teaching experience who occasionally logged into the virtual classroom from the same campus computer lab where I was present. However, due to the placement of the computers, we never talked to each other off-screen during class time in the physical environment.

Data collection and Analysis

This study used multiple data sources. Two primary video data sources were the online course archives (a total of 27 hours) and the focal students' video-recordings of themselves in their physical off-screen environments (approximately 20 hours for each participant). All recorded videos were converted to a file format that was compatible with *Adobe Premier Pro CS4*. Using this software, I synchronized the two collections of video data so that I could see the students' off-screen behaviors and the online class activities simultaneously in a picture-in-picture format (Appendix B).

I also collected data from students' written reflections on their learning experiences, an anonymous online class survey, and 45-minute interviews with the focal students after completion of the course. Throughout the semester my observations and field notes were recorded in a journal to support organization of my thoughts. Other archival data include the course syllabus, lesson plans, learning materials, and the course website.

I began the recording the online classes the first week of the semester using a *Wimba* archival tool that is a built-in feature of the software. I announced the study via email during the third week of the semester, and all students who enrolled in the course agreed to my conducting the research. The students who responded to my recruitment flyer about filming their off-screen activities arranged to meet with me on campus individually. After signing consent forms to

participate in the study, they each received recording equipment and instructions (Appendix C). By the fifth week of the semester, the focal students were ready to begin recording their offscreen activities. The duration of filming was between 60 and 90 minutes for each class, and the focal students filmed themselves for approximately 10 weeks. However, due to personal, technical, and budgetary limitations, the duration and condition of the recordings were not always uniform or comprehensive; the start time and duration varied between the participants.

Using *Adobe Premier Pro CS4*, I roughly transcribed all of the verbal behaviors and visual information in the archived online classes and the focal students' off-screen verbal and nonverbal behaviors (Appendix D). I continued to develop the transcriptions by watching the synchronized video recordings numerous times and taking notes about the students' off-screen behaviors. Two whole-class activities from each class were chosen from the corpus because a substantial amount of the focal students' off-screen verbal behaviors were recorded at the same time. I coded the focal students' correction behaviors in their off-screen environments into several types. I further transcribed the selected data following the conventions developed by Gail Jefferson (Schegloff, 2007) (Appendix E) and analyzed the data using the CA for SLA framework (e.g., Kasper, 2009; Seedhouse, 2004). Detailed examination of the focal students' verbal and nonverbal behaviors, such as intra- and inter-pauses, sound stretches, gazes, posture changes, and body movements, played an important role in the data-analysis process.

Transcription

Due to the unique qualities of the synchronized data excerpts, I formatted the transcripts into two columns in order to capture simultaneous actions engaged in by the participants in both online and off-screen environments. The actions presented in the same row in different columns show that the activities took place at the same time. The left-hand column describes online

classroom interactions and the right-hand column shows the focal student's offline verbal and nonverbal behavior in her physical environment. English translations of the Japanese utterances are given in italics under the audible utterances.

In the following section I describe the characteristics of the online environment which are contrasted with those in the off-screen environment, while focusing on the focal students' offscreen correction behaviors when they are not selected as nominated speakers. By so doing, I argue the importance of investigating the physical environment of students in distance language education research because this is the very context where the students were actively initiating self- and other-correction.

Findings

Characteristics of online classroom discourse: Opportunities for TL use

In this section I will summarize characteristics of online classroom discourse by describing how the interactional organization was shaped partly by software features, and how it influenced the opportunities for TL use for the focal students in this online environment.

Excerpt 1 shows an interaction between a nominated student and the instructor in the online classroom where the instructor gives a series of corrections during a whole-class activity. Excerpt 2 shows a brief yet similar interaction between the instructor and one of the focal students, but there was no follow-up turn by the teacher. As the examples show, one-on-one interaction was common in the online classroom during teacher-centered activities where each turn was mediated by the instructor during the whole-class activities. The other non-nominated class members were expected to listen to the online interactions and avoided interrupting the online talk. In face-to-face contexts, this special turn-taking organization tends to occur in large-scale formal environments such as classrooms because there are many potential speakers; when

only one or two speakers are allowed to take speakership, the remaining students become an "overhearing audience" (Heritage, 1997, p. 165). However, the interactional patterns observed in this study were shaped not only by the institutional goal, but also by the characteristics of the VoIP and non-use of web cameras, which resulted in an ambiguous turn transition with reduced communicative clues (see chapter 3). The software features reinforced the special turn-taking organization of this online classroom environment where teacher-student roles were heavily influenced by the institutional setting.

Excerpt 1 begins with the nominated speaker, Daniel, responding to the instructor's initiation question; however, his speech includes linguistic errors as well as speech perturbations such as cut-offs and sound stretches (lines 1, 5, and 8). Also, there is a long pause (7.7 seconds), before the nominated speaker takes the next turn (line 4). The instructor initiated a series of corrections in response to Daniel's answers (lines 2, 7, and 10), as she expected Daniel's self-correction in subsequent turns. His unsuccessful performance led him to take four turns before the instructor finally showed her approval (line 15). This excerpt shows that Daniel's linguistic errors ensured his receipt of subsequent turns, resulting in additional time for him to use the TL and encouraging his self-correction. A preferred repair organization in the online environment agrees with a finding in McHoul (1990), a common usage of the instructor's other-initiated self-correction in a classroom learning.

Excerpt 1: Daniel's turns with linguistic errors

D: Daniel

T: Teacher

1.	D	*ma::(.)ri:: no: desu (0.6) *ma::ri:: sa::n no desu
		"It's Mari's." ((Incorrect name)) "It is Ms. Mari's." ((Incorrect name))
2.	Т	(m)m::ari san no desuka? ((Clears throat))
		"Is it Ms. Mari's?."

3.		((Circles visual))
4.		(7.7)
5.	D	* i::: (0.3) chi::: roo::: (0.2) de(.)su?
		"It is Ichiro." ((Omission of Mr. and possessive marker no))
6.		(1.0)
7.	Т	un ichi[roo] sa:n
		"Yeah, Mr. Ichiro"
8.	D	[uh] ichi san (1.1) *ichiroo san desu ((Omission of the possessive marker
9.		<i>no</i>))
		"Uh, Mr. Ichi." "It is Mr. Ichiro."
10.	Т	ichiroo san NO↑ desu
		"It is Mr. Ichiro's."
11.		(1.4)
12.	D	oh $o^{\circ\circ}$ kay $^{\circ\circ}$ (0.4) ichiroo san desu i: chi:(h) (0.6)
13.		u:ggh (h)i: chi:: roo:: (0.3) sa::n <u>no::</u> de::s
		"Ah, uh, (it) is Mr. Ichiro he Ichi he ugghh Mr. Ichiro's."
14.		(1.0)
15.	Т	HAI iidesunee
		Okay, that's good.

The following excerpt, in contrast with previous sequence, shows a nominated speaker,

Mei, performing smooth and error-free speech. In line 2, Mei quickly takes her turn and responds

correctly to the instructor's question. In the subsequent turn, she received immediate approval

from the instructor. Her successful performance meant completion of her turn and led to a topic

shift.

Excerpt II: Mei's turn without a linguistic error

1.		(1.0)
2.	М	yo:ko:: san no: desu
		"It's Ms. Yoko's."
3.	Т	HAI soodesune (.) yooko san no desu
		"Yes, that's right. It is Ms. Yoko's."
4.		(1.1) ((T enables students' writing tools))
5.		HAI jaa:: eetto:: now you ha::ve e:: privilege to write
		"Okay, then, uhm now you have the privilege to write."

The previous examples illustrate that the students' utterances, categorized as having or not having linguistic errors and disfluency, determined the trajectory of the turn-by-turn

instructional focus. The turn-taking organization showed much control by the teacher, who engaged in linguistic correction while she prompted the learner's self-correction. Whereas overall student performance cannot be grouped into the two distinct categories described above, the two focal students' performance in the study fell exclusively under the latter category because they seldom made linguistic errors during the teacher-centered activities; therefore they had fewer opportunities to engage in TL use than those who frequently spoke erroneously. For the FL learners, a classroom environment is the primary and possibly the only place to engage in TL use. It is a particularly desirable environment for experimenting with linguistic usage, reciting the language to others, learning the language collaboratively from class participants, and at the same time receiving guidance and instruction from the teacher. However, in the online environment, the two focal students' TL use opportunities were limited because of the instructional trajectories created in this class and partly shaped by the software features, forcing one-on-one interaction.

Based on the online classroom discourse, a question may be raised about the lack of TL use opportunities for the latter category of learners (those who made few errors): is there any opportunity for them to initiate and engage in some kind of correction behaviors in this learning environment? In the following section, I will answer this question by demonstrating how the focal students engaged in TL use in their off-screen environments through their careful monitoring of their own and others' speech.

Off-screen TL learning opportunities

Across the data, I found evidence that the two focal students were extremely consciousness of their own and others' linguistic usage in the off-screen environment, even when their L2 performance was not subject to evaluation by anyone. Whereas in the online class

environment the interactional organization was shaped by both the software features and the success or failure of the students' linguistic performance, in the off-screen environment the focal students actively initiated and freely engaged in correction behaviors. They took their own private turns while they observed nominated students' online performance.

Inter-Pauses / Silences

"Time-out" is a distinctive phenomenon in the online environment that can also be seen in the face-to-face classroom (McHoul, 1978). It is a common phenomenon characterized by a long delay in the nominated student's response to the instructor's question when there are no other turn-taker competitors. If the pause is perceived as too long by the instructor, s/he might believe that the question was not heard or understood. The major difference between F2F and online classrooms, however, might be characterized by the extended length and substantial amount of such delays in the latter environment. For instance, one of the whole-class interactions, taking approximately 6 minutes in the corpus, showed that 88.5% of the speaker changes from instructor to student included inter-pauses ranging from 0.5 to 11.3 seconds (average, 3.7 seconds). Without the physical presence and gazes of class members, there is a tendency for students to feel less pressured to take turns immediately in the online class. As a result, the students tend to take this classroom feature as an "advantage" in terms of having additional planning time to produce the TL. However, such planning time in the online environment appears to the rest of the class members as an inefficient waiting period, especially when these turns are followed by the teacher re-calling the nominated student's name and/or readdressing the question, which often occurs. In addition, the class may lose the continuity of the instructional flow. In contrast, the following excerpts will show that the focal students use the time to rehearse the TL by engaging in self-correction in the off-screen environment.

In Excerpt 3, Soo Yun begins engaging in self-corrections while the nominated student, Robert Field, does not respond immediately to the instructor's question. The sequence begins with a question addressed to Robert by a previously nominated student, "chair" wa nihongo de nante iimasuka ("what is chair called in Japanese?"). Soo Yun gazes at the image on the e-board (linen 1-2). A picture of various objects in a room is projected on the online classroom e-board as the focal point of the activity. A period of 3.4 seconds elapses before Robert takes his turn. During this period, in the off-screen environment Soo Yun's lips begin to move slightly, verbalizing some utterances (line 4). She gazes at the projected picture. In line 6 the instructor calls on Robert to prompt his speech; however, Robert does not initiate his reply immediately. The class continues to be silent for 22.1 seconds (lines 7-13). During this time Soo Yun slowly verbalizes the English words "telephone" and "clock," two of the objects in the picture that can be used to construct a sentence (line 8). After 0.9 seconds she switches her language into Japanese. Although there is no apparent trouble in her speech, she repeats the word, *tokei* ("clock") three times (line 9). In line 10 to 11 after 1.9 seconds, she begins speaking a phrase, but it begins with a false start, *clock wa:: (.) *nihondo de::* ("Clock in Japanese"), which includes the incorrect use of $\frac{1}{0}$ for $\frac{1}{20}$. In the next second, she quickly self-corrects her speech with the accurate target form, >clock wa nihongo de nante iima°suka°< ('What is clock called in Japanese?') (lines 11-12). In the online environment the instructor once again prompts Robert by calling his name (line 14).

During this lengthy silence in the online environment, Soo Yun was able to monitor her own speech, starting with a fragmented English word and finally articulating a target sentence. She actively engaged in monitoring her own speech during the silence when another student was nominated. Immersed in the off-screen environment, Soo Yun perceived the long intra-pause as the most suitable time to rehearse her own speech in anticipation of her future nomination. This was the only time that she was assured of not being nominated by the instructor because another student was on the call. The long delay unintentionally created by the nominated online student was considered by Soo Yun as a luxurious rehearsal time, free from an "immediate threat" of being nominated.

Excerpt 3: Soo Yun's self-correction

	TT 1
	Leacher
1.	I Cacille

1. 2			((Gazes at the image on the e- board))
2.		(3Λ)	(1 3)
J. 1		(3.+)	(1.5)
4.		\downarrow	() tele $()$
Э.	-		(0.7)
6.	Т	ha::1 fi::rudo sa::n ((Roberts' last	
		name))	
		"Okay, Mr. Field."	
7.		(22.1)	(1.0)
8.		\downarrow	telepho::°ne° (1.1) clock
9.			(0.9) to(.)kei °tokei° °°tokei°°
			"clock. clock. clock"
10			(19) clock wa () *nihondo
11			de >clock wa nihongo de
12			nante ijma°suka°<
14.			"As for clock in Ispanose, how
			As for clock in Jupunese, now
10			is clock callea in Japanese?
13.			(0.9)
14.	Т	fi::rudo sa:n	
		"Mr. Field."	

In the next example, inter-pauses created by the nominated student, Josh, prompted the focal student, Soo Yun, to complete the turn for him; she responded to the question in place of Josh in her off-screen environment. As Soo Yun repeatedly fulfilled the nominated speaker's turn, she contingently engaged in self-correction behaviors, in which her TL use developed greater accuracy and fluency each time she vocalized.

The excerpt begins with Mei's turn, prompted by the instructor (Excerpt 4). Mei addresses a question to Josh, kore wa:: ninhongo:: de:: nante: iimasuka ("what is this called in Japanese?"). Josh is the next selected speaker, yet he fails to initiate a prompt response and takes a long delay (9.4 seconds). However, in the offline environment Soo Yun breaks this silence to complete the second pair part of the sequence, completing the adjacency pair (line 3). Adjacency pairs compose pair types that are interactional exchanges, including question-answer, offeraccept/decline, etc. (Schegloff, 2007). Soo Yun interprets the absence of the second pair part as a trouble source and attempts a repair. In line 3 Soo Yun verbalizes the first target syllable, /to/, with a lengthened vowel, to::. She pauses again and then develops it into a single word, to::da::: *na* ("cabinet"). Then she self-corrects her speech by quickly repeating the word a couple of times (line 4). The target answer is sore wa todana tte iimasu ("that is called cabinet"), a complete sentence; therefore, her verbalization is not yet like the target response. There was a silence in both online and off-screen environments. In line 6 the instructor mediates the turn, prompting Josh to initiate his turn, but silence continues for 4.5 seconds. In her physical environment Soo Yun looks at her notebook. Responding to the instructor's call for Josh's response, she promptly supplies a reply for Josh, todana tte iimasu ("is called cabinet"), with a verb predicate (line 8). There is another silence in online and off-screen environment. In line 10 Josh finally initiates his turn hesitantly, *ha:i (0.1) u:::m* ("yes, um") as he acknowledges the silence was heard enough by the instructor. However he takes an additional long inter-pause (4.5 seconds) (line 11). In the offscreen environment during this silence, after a brief pause, Soo Yun vocalizes her target response, sore wa:: (0.8) to::: (0.4) da:::: na:: (0.3) tte iimasu ("that is called cabinet") while looking at the screen and her notebook back and forth (lines 11-14).

Every time Josh ended his turn with a missing second pair part, Soo Yun repaired for him in the off-screen environment, taking on the identity orientation of a more linguistically accurate contestant in an "L2 quiz show." She revealed her competitiveness and strong desire to be a better student/speaker in her off-screen environment. Although her answer did not start off as perfect in terms of accuracy and fluency, it gradually developed as she engaged in increased TL use. Her off-screen self-correction was contingently prompted each time the nominated student missed his online turn.

Excerpt 4: Soo Yun's completion of a nominated speaker's missed turns

M: Mei

J: Josh Taylor

T: Teacher

1.	М	kore wa:: ninhongo:: de:: nante: iimasuka "How is this called in Japanese?"	
2		(94)	(3.2) ((gazes at the screen))
3			$to^{(0,1)}((0,1))$ to $(0,1)$
4.		*	>todana todana<
			"Cabinet, cabinet, cabinet"
5.			(2.4)((looks at notebook))
6.	Т	hai (.) te:ra:: san ja:	
		"Okay, Mr. Taylor, your turn."	
7.		(4.5)	(0.6)
8.		Ĵ,	todana tte iimasu
		·	"(It) is called cabinet"
9.			(2.9) ((gazes at the screen))
10.	J	ha:i (0.1) u:::m	
		"Yes, um."	
11.		(4.5)	(1.3) ((checks notebook and
12.			the screen))
13.		\downarrow ((T marks a picture on the e-board))	sore wa:: (0.8) to::: (0.4) da::::
14.		(0.9)	na:: (0.3) tte iimasu
			"That is called cabinet."

Inter-pauses, delayed turns taken by the nominated students in the online environment, appeared to be inefficient use of class time from the instructional perspective; yet they unexpectedly created the opportunities for the focal students to engage in their self-correction behaviors in their off-screen environment.

Disfluency

L2 speakers' disfluency is characterized by cut-offs, sound stretches, hesitations, and intra-pauses (Markee, 2000). In pedagogical interactions, instructors frequently engage in a strategy where they "withhold" their completion of an utterance to allow students to self-correct (McHoul, 1990, p. 362). Koshik (2002) examined a similar conversational mechanism called Designedly Incomplete Utterance (DIU), that is, a turn without a complete turn constructional unit (TCU) used by the teacher in order to elicit a display of knowledge by the student. In a non-pedagogical context, the similar phenomenon is also observed as anticipatory completions (Lerner, 1996), "one speaker continues a TCU of the prior speaker with a syntactically fitted continuation of the current speaker's utterance-in-progress" (Koshik, p. 301). Such utterances are often marked by pauses and sound stretches.

Excerpt 5 shows a similar mechanism in interactions caused by disfluent turns-inprogress taken by the nominated speaker in the online environment and the corrective turns taken by the focal student, Mei, in the physical environment. Characterized by disfluency, intra-pauses and sound stretches, it takes approximately 30 seconds for Ji to utter a single sentence during this sequence. The target answer is *kono hurui denwa wa dareno denwa desuka* ("Whose old phone is this?"). Ji is the online nominated speaker, addressing a question to another student, Laura Stephens. In line 1 Ji calls on Laura and marks the speech with hesitation, *uh*:::, seeking a sentence topic. A brief intra-pause is taken and continues after the first target word, *ko:no::*

("this"). Following another intra-pause (2.3 seconds), Ji shows his uncertainty, uh?. In the offscreen environment Mei casually laughs at Ji's performance, demonstrating her confidence in her own knowledge of the language (line 2). In line 5 Ji re-initiates the question as in ko:no::: (1.4) huru (0.7) huru:i::: (0.5) uh huru:i::: ("this old, old, old") with false starts including sound stretches. While a 2-second pause is taken in the online environment, in which Ji's utterance is still in progress, in line 8 Mei completes the absent word for Y, *de:nwa* ("telephone"). In the online environment Ji self-repairs his speech (line 9) by recycling his last utterance, hurui as in huru: i de:nwa:: ("old phone"). Following a brief intra-pause (0.3 second), Ji re-engages in his utterance by giving a topic marker, wa, with vowel elongation. In the off-screen environment Mei's utterance latches with Y's, giving the answer, the topic marker wa, as well (line 10). Whereas Ji pauses for 0.8 second before resuming his utterance, Mei anticipates what utterance Ji is about to deliver. Instead of quietly observing Ji's performance, she fluently completes the correct form for Ji in the off-screen environment, wa dare no desuka:: (lines 10-13). Mei's body moves away from the desk and reclines deeply on the chair, showing that her mission was accomplished. In line 13 Ji's brief pause was interpreted by the instructor as a break point; she provides reinforcement and acknowledges the correctness of his speech to encourage his continued performance. In line 14 Ji completes the sentence, and his speech receives an approval.

Excerpt 5: Mei's offering a correct form

J: Ji

T: Teacher

1.	J	suti::buns-san uh::: (0.3) ko:no:: (2.3) uh?	
		"Ms. Stephens, uh, this uh?"	
2.		(2.3)	hahaha
3.		uh:: (0.8) uh:: wai:t	

4.		(1.6)	
5.		ko:no::: (1.4) huru (0.7) huru:i::: (0.5)	
6.		uh huru:i:::	
		"As for this, ol, old, uh old"	
7.		(2.0)	
8.		\downarrow	de:nwa
9.			"phone"
10.		huru:i de:nwa:: (0.3)	((Reclines on the chair))
		"old phone	
11.		wa:	wa
		Topic marker	Topic marker
12.		(0.8)	dare no desu=
13.	Т	un	=ka:::
		"yeah"	"whose is it?"
13.		(0.5)	((Grabs a bottled water and
14.	J	uh:::: (2.8) da:re:: (0.1) dare: no:: desu ka?	begins drinking))
		"uh whose is it?"	
15.		(0.8)	
16.	Т	u::n soodesune:::	
		"Yes, that's right."	

Ji's elongation of vowels followed by intra-pauses incidentally created a gap between the utterances, which uniquely invited the focal student to offer the correction and complete the utterance for Ji. While the focal student's self-participation during the current speaker's utterance-in-progress was not intentionally designed by the nominated speaker, the turn construction incidentally encouraged the off-screen student to complete the utterance. The focal student would not have an opportunity to fill in the online speech if the first utterance had been delivered fluently. The focal student's close monitoring of the nominated student's speech was apparent, as was her strong confidence in her L2 knowledge. Sound stretches and intra-pauses are perceived to be an invitation by the focal student to complete the nominated speaker's utterances as an absolutely incidental correction opportunity.

Linguistic errors

Many classroom studies in second language learning have focused on correction behaviors engaged in by instructors (e.g., Hellermann, 2005; Markee, 2000). Overt correction behaviors seem to be privileged roles taken primarily by the subject authority in a classroom; otherwise, they can be perceived as face-threatening. However, in the off-screen environment the focal students were free to closely monitor their peers' linguistic errors and engage in overt other-correction because other class members could not hear them.

Excerpt 6 shows the focal student Soo Yun's overt other-correction in her off-screen environment. In line 1 Daniel, the nominated speaker in the online environment, addresses a question to Mei. Following 1.9 seconds, he re-starts the speech, but uses the incorrect pronunciation, /ki/, for /chi/ in /chiisai/ ("small"). In the online environment the instructor quickly recasts Daniel by saying *un CHII::SAI* in a high-pitched voice. In the off-screen environment Soo Yun utters the word, noticing Daniel's linguistic error. Daniel does not notice the recast and continues with his speech. In the off-screen environment Soo Yun quickly restates the correct word, *chii:sai*, even though Daniel cannot hear her. After a brief pause (line 7) Daniel realizes there was something wrong, saying *oh*. However, he resumes his speech without correction, **kiisai ne::ko:: wa::* (lines 7-8). This time Soo Yun raises her voice, emphasizing the incorrect sound, *CHI::sai* (line 7). In the online environment the instructor also gives a correction one more time, saying *CHII::sai::* (line 9), highlighting the mistake. Daniel still does not realize the error (line 10). In the off-screen environment Soo Yun further recasts Daniel by raising her voice, *CHII::sai* (line 11). Excerpt 6: Soo Yun's overt other-correction

D: Daniel

T: Teacher

1.	D	Jia san	
		"Ms. Jia."	
2.		(1.9)	
3.	D	koh:: no:: *ki: ssai neko (0.6) wa:::	
		"This small ((Incorrect pronunciation)) cat"	
4.	Т	un CHII::SAI	chii:sai
		"Yeah, small"	"Small"
5.	D	<u>da:::</u> re:: no	chii:sai
		"Whose"	"Small"
6.		(0.6)	
7.	D	oh *kiisai=	<u>CHI::</u> sai
8.		=ne::[ko:: wa::	"Small"
		"Oh, small ((incorrect pronunciation)) cat"	
9.	Т	[CHII::sai::	
		"Small"	
10.	D	*kiisai?	
		"*Small ((incorrect pronunciation))?"	
11.		(1.3)	CHII::sai
12.		`↓ ´	"Small"
		-	

The above example shows the focal student's close monitoring of another student's linguistic usage in her private environment, where she repeatedly engaged in overt correction behavior very similar to that of the teacher. In this excerpt the focal student oriented to an identity beyond the norm of the institutional setting, that of an expert rather than an apprentice. Her level of self-confidence seemed to increase in the off-screen environment as she repeatedly engaged in overt correction, demonstrated by raising her voice. The focal students were not only attentive to their own linguistic usage, but they were also highly sensitive to that of other class members.
The following excerpt (Excerpt 7) shows that Mei acquired new knowledge through the teacher's correction of a nominated student in the online environment, which was privately applied to another nominated student's linguistic error in a later sequence.

The excerpt begins with Daniel's taking a nominated turn (line 1). His speech includes a pragmatic error, omitting the honorific suffix *san* and possessive particle *no*. In line 3 the instructor recasts the form to encourage his self-correction in the following turn. At the same time in the off-screen environment, Mei also recasts Daniel's speech, saying **ichiroo no desu* ("It is Ichiro's"), not acknowledging that *san* is omitted (line 3). This was the third time she privately repeated the utterance before Daniel took speakership. In the online environment Daniel's speech latches with the instructor's; he initiates his correction (line 4), though with a false start. Following a 1.1 second intra-pause (line 6), both Daniel and Mei self-correct their own speech at the same time in their different environments. Daniel's speech is partially corrected, whereas Mei's off-screen speech becomes error free by incorporating the instructor's "incidental recast" (Ohta, 2001), which was actually addressed to Daniel. Responding to Daniel's error (line 7), the instructor gives an explicit recast by exaggerating the omitted *no* with an increased tone of voice.

The whole-class activity targeting the same sentence structure continues with other nominated students for about two additional minutes. Ji becomes the nominated speaker. In line 8 Ji repeats his utterance with the same mistake that both Daniel and Mei made in the earlier turns (lines 1 and 2, respectively); that is, omitting the honorific suffix *san*. The instructor prompts Ji to self-correct by partially repeating his answer with a rising intonation to invite his self-correction. In the off-screen environment Mei slightly laughs at Ji's mistake, showing her self-confidence (line 10). After a brief pause (0.9 seconds) Ji re-initiates his answer (line 11). In

line 12 as Mei responds to Ji's utterance, she gives correction to him in the off-screen

environment, highlighting his and her own previously mistaken form, sa:n ("Ms."). Ji also self-

corrects his speech, uh mari san nodesu ('Uh, it is Ms. Mari's) (lines 11-12).

Excerpt 7: Mei's noticing own error that led to other correction

D: Daniel

J: Ji

T: Teacher

1.	D	*i:: (0.3) chi::: roo::: (0.2) de(.)su? "(<i>It</i>) is ichiro." ((Omission of the honorific suffix san and the possession partials no))	
2		(1.0)	
2. 3.	Т	un ichi [roo] sa:n "Yeah Mr Ichiro"	*ichiroo no desu "(It) is Ichiro's " ((Omission
4.	D	[uh] ichi san "Uh, Mr. Ichi."	of the honorific suffix <i>san</i>))
5.		(1.1)	
6.	D	*ichiroo san desu "(<i>It</i>) is Mr. Ichiro." ((Omission of the possession particle no))	ichiroo san no desu "(It) is Mr. Ichiro's."
7.	Т	ichiroo san NO↑ desu ((Approximately two minutes later))	
8.	J	*ma::ri:: no:: desu "(<i>It</i>) is Mari's." ((Omission of the honorific suffix san))	
9.	Т	mari::? "Mari?"	
10.		(0.9)	hah
11.	J	uh mari=	
12.		=san nodesu "(It) is Ms. Mari's."	sa:n " <i>Ms</i> ."
13.	Т	<u>u::n</u> soodesunee (0.7) "That's right."	

The above example shows that the focal student's initial error in the off-screen environment was incidentally corrected by the recast given to Daniel in the online environment. This self-correction came as a result of her noticing (e.g., Schmidt, 1995; Schmidt & Frota, 1986) her own pragmatic error, even when the teacher's correction did not directly target her linguistic error. Her appropriation of the form later led to other-correction in the off-screen environment when the same mistake was presented by another speaker in the online classroom. Similar to Soo Yun's other-correction behavior, Mei's identity orientation shifted from turn to turn. At times she takes a strict institutional role as a student who seeks instructional guidance, and other times she is a confident L2 speaker with much linguistic knowledge that was acquired through her attentiveness to the online instruction and her active verbal engagement in the offscreen environment, even when she was not directly participating in the online interaction.

Conclusion and implications

In this paper I argue the importance of examining students' physical environments during web-based language instruction, a practice normally dismissed by practitioners and researchers, in order to improve the understanding of learners' off-screen learning behaviors. The study provides ample evidence of learners' active engagements and initiations with self- and other-correction behaviors in their off-screen environments. The students' active off-screen behaviors were in contrast to those of students in the online environment where the nominated student's agency was minimized by restricted turn allocation based on the interactional organization and pedagogical focus. The one-on-one interactional patterns were also reinforced by limitations imposed by certain features of the software. In contrast, the focal students made a great use of the off-screen instructional context, where they could not be observed by class members or the instructor, by actively and freely initiating and engaging in the self- and other-correction behaviors. The students' correction behaviors in the off-screen environment were invited by the discourse context that was contingently created by the online nominated students' delayed turns/intra-pauses, disfluency, and linguistic errors. Consequentially, learners' agency and

autonomy were enhanced in their private environments, where they were free from institutional control.

Soo Yun privately oriented to self-correction/rehearsal in the physical environment during a long delay unintentionally created by an online nominated student because she was free from the "immediate threat" of being nominated. This phenomenon illustrates the focal students' close monitoring of their own self-speech even when their L2 linguistic usage was not being evaluated by the instructor. The students showed a desire to improve their accuracy by speaking out the TL during class. This is probably a reflection of the pedagogical goal presented by the instructor and the course curriculum, which was form-focused. At the same time, other data, such as those collected through interviews and essay assignments, reflected the students' strong belief that they need to speak the language out loud to improve their accuracy, similar to the L2 students' data observed in studies by Seedhouse (2004) and Kasper (2009). During a postsemester interview, Soo Yun described what language learning means to her by saying,

It's like, um, like one of the body parts, like so in language learning it shines when I speak like in, fl, fluently. So, um, your body parts, you can use it like freely as I want, so, um, to learn languages is we want to say something like without hesitation and stuff (Interview with Soo Yun on May 11, 2009).

Her halting yet insightful comment shows her great awareness of what language learning might entail, reflecting her previous experience learning advanced English as an L2 speaker. This thoughtfulness was also present in every one of Mei's written assignments, reflecting her previous language learning experiences. Their advanced L2 learning background and experiences might have increased their metalinguistic awareness, which reinforced their belief that adopting accurate language use is valuable.

Sound stretches and intra-pauses were perceived to be another incidental opportunity where the focal student oriented to completing the nominated speaker's utterance-in-progress. This demonstrated the focal student's monitoring of not only her own, but also others' speech. This opportunity showed the student's increasing confidence in her L2 knowledge. Whereas the literature has described intentional incompletion of utterances as a teaching strategy, no previous study has found that students gain a learning opportunity through the unintentional incompletion of utterances by a peer. The current study uniquely illuminates our understanding of learners' correction behaviors that normally cannot be seen in a traditional classroom environment. This revelation can be attributed to the invisibility of the off-screen environment, which creates unique learning opportunities for students. Although the teachers' correction behaviors have been the primary interest in the SLA classroom literature, this study shows that learners themselves can initiate corrections similar to those of teachers in their private environments when they are not in face-threatening situations. The focal students' overt other-correction in their off-screen environment was also observed during class instruction. In a context like this, the institutionally assigned student identity was weakened and was replaced by that of a confident expert. For instance, Soo Yun's correction behavior was similar to the instructor's correction, but class members were not aware of her off-screen activities that could have been face-threatening in a classroom environment. Mei's incidental self-correction was later applied to another student's same mistake as an other-correction behavior. This excerpt showed that the nonnominated students in the private environment benefited from peer learners' errors and corrections taking place in the online environment. The focal students' other-correction behavior showed their great awareness of other students' linguistic usage. It is highly likely that learners

frequently attend to other's linguistic usage in their minds because they can do so without having to deal with a face-saving issue.

In terms of research methodology, I assert the great success of the unique method adopted in this study, which examined both online and off-screen environments of learners in the web-based instructions. This method provided rich information about the learners' learning behaviors and processes that could only be obtained by shifting our focus away from the "online only" learning environment. Online language course research comparing course delivery formats (i.e., classroom versus online) based on students' learning outcome alone negates the importance of the learning process. Without adequately considering the learners' learning environments, including the off-screen context, such comparisons of learners' outcomes are not equivalent. Considering online language education, it would be productive to examine not only what appears as the immediate benefit of technology, but also the kinds of affordances and constraints that might be created by users with the given technology. Although the researcher has relatively easy access to online data, it is important to also include the off-screen component of the learning context in order to understand what shapes the student's learning environment at the micro and macro level (Garcia, Standlee, Bechkoff, & Cui, 2009).

The main implication of this study is that it clearly shows that the online, off-screen learning environment where web cameras are not used can offer a learning advantage to some students. The environment created by the software was uniquely adopted by the focal students, whose agency and autonomy were enhanced by being free from the institutional setting. It is possible that the "visually deprived" online context, where body movements, lip reading, and facial expressions could not be observed, might have enhanced the students' "auditory" ability, compared with their F2F classroom counterparts, because their classroom success relies heavily

on listening to others' speech in order to communicate. This may be a fruitful area of investigation for the future research in technology-based language instruction.

In web-based teaching, we need to be aware that what appears in the online environment can only give a partial picture of learners' learning processes. We must acknowledge that characteristics of the students' off-screen environment can stimulate vigorous student efforts to engage in L2 learning, even when the learners are not direct participants in an interaction. We also should value differences in the students' backgrounds and consider having mixed–level classes, that might be helpful to stimulate learners' linguistic competence in an unexpected way.

From the SLA point of view, increased opportunities to verbalize the TL in the off-screen environment have implied benefits for student learning, although this needs further investigation. In addition, disfluency, including hesitation and silence, is frequently disregarded in SLA classroom discourse research (e.g., Lyster and Ranta, 1997); however, these discourse features might play a key role in fostering our understanding of non-nominated students' increasing metalinguistic awareness. Furthermore, these non-nominated students' noticing behaviors would be an interesting topic for future examination.

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CHAPTER 6

CONCLUSION

In the final chapter I summarize findings from the three manuscripts. I conclude the section with implications for practitioners and researchers in second and foreign language (L2 and FL respectively) instruction and technology-based language learning.

Chapter 3 examined interactional norms created by the focal student who participated in the online class privately in her off-screen environment. Observations of her speech, gaze, posture, and the interaction with her physical surroundings clearly showed that the focal student did not participate in the online interaction as a passive observer, but as an active participant who speaks and utilizes online silence as rehearsal time in her off-screen environment. Analysis showed that her identity shifted from that of an apprentice to that of a confident expert on a moment-by-moment basis.

The online interaction took the form of a special turn organization system, in which distribution of turn taking is unequal between the teacher and the students due to the institutional setting that was reinforced by the technical characteristics of the software. For instance, the lack of visual clues such as gazes during turn transition caused ambiguity in the timing and selection of the next speaker; this often resulted in lengthy inter-pauses at turn transitions. These factors create an interactional norm in the online classroom that tends to give students a more controlled learning environment. The class participants strictly oriented to their socially assigned identities in order to fulfill the interactional goal in the given institutional setting. A one-on-one interaction in the online environment limited the students' speakerships to only those who were nominated by the instructor, while the rest of the students were expected to quietly listen to the online interaction in their off-screen environments.

In contrast, these online interactional traits distinctively showed another picture when examining the focal student's off-screen activities, where she created norms particular to her private environment. The focal student's engagement in verbal behaviors in the physical environment showed her taking an active role in her learning even when she was not a nominated speaker. Her activeness was exemplified by the quantity of her speech and the quality of her verbal and nonverbal engagement in online versus off-screen environments. Contrary to what is suggested in the literature on face-to-face institutional interactional norms (Heritage, 2005), the online learner who overhears an interaction between other students need not take a passive role in her own environment. The student also took private turns in the off-screen environment during the time the instructor was taking the speakership with no consideration of developing intersubjectivity with the online interactant. Further, the institutional context did not solely define what identity the student oriented to during the online instruction; rather, she actively chose the role she desired to play at the moment of the speech.

The study shows that the focal student took advantage of being in the course setting, immersing herself in the online virtual and off-screen physical environments. The norm that was developed in this institutional context was offered by the affordance that was shaped by the online/off-screen learning environments.

Chapter 4 explored several learning behaviors and activities that the focal students engaged in during an online Japanese course. These include focal students' 1) provision of private scaffolding via technology, 2) receipt of private assistance from non-class participants in their physical environments, 3) demonstrations of off-screen learning behaviors that are unpredictable and uncontrollable by instructors and their pedagogical plan, and 4) active verbal engagement in the off-screen environment when their physical location was perceived as safe.

Although some off-screen engagements might be viewed as irrelevant to language acquisition from a teacher's viewpoint, further inspection provides another perspective. This analysis shows how the learners make use of various affordances unique to the online/off-screen learning environment by actively engaging in their language learning behaviors. The learning behaviors, which include various contextual cues such as verbal and nonverbal communications, artifacts, and physical environments, play an important role in helping us understand the learners' learning process from their perspective.

However, the study also shows the affordances of such learning environments are not always guaranteed to serve the student's learning in a positive manner, as planned by the instructor or course developer. For example, my analysis showed that the focal students were surrounded by an environment that is full of temptation yet their activities in the physical environment are out of reach from the instructor's eyes. This re-confirms the fact that the success of the online education depends largely on individual learners who attend to and create their own learning process. Their learning potential may be increased by actively perceiving, interpreting, and engaging with the physical environment, as the ecological perspective of language learning suggests (van Lier, 2000, 2002, 2004).

Chapter 5 examines the off-screen self- and other-correction behaviors that two focal students initiated in their physical environments while they participated in the online instruction. The findings show that the focal students made great use of the online/off-screen instructional context by actively and freely initiating and engaging in the self- and other-correction behaviors. Their activities in the off-screen environment were prompted by the discourse context contingently created by the online nominated students' delayed turns/intra-pauses, disfluency, and linguistic errors. The students' active off-screen behaviors contrast with those in the online

environment where the students' agency was minimized by the restricted turn allocation required by the instructional focus. With the one-on-one interactional pattern, the focal students, who generally demonstrated error-free performance, did not often take online turns; thus they frequently became listeners during online instruction.

Contrary to the focal students' limited opportunities to engage in the target language in the online environment, they privately oriented to self-correction/rehearsal in their physical environment during long delays unintentionally created by an online nominated student. This happened particularly when the focal students were free from the "immediate threat" of being nominated. This phenomenon illustrates the students' close monitoring of self-speech and their striving for opportunities to improve their accuracy, even when their L2 linguistic usage was not being evaluated by the instructor. This may be due to multiple factors. For example, the speculation may include the pedagogical goal presented by the instructor that matched the students' learning objectives; both students desired to become fluent speakers, and their advanced L2 learning background might have increased their metalinguistic awareness and reinforced their belief in the value of accurate language use.

Sound stretches and intra-pauses are perceived to be another incidental opportunity where the focal students oriented to completing the nominated speaker's utterance-in-progress. This demonstrated the focal students' monitoring of not only of their own speech, but others' speech as well. This opportunity showed the students' increasing confidence in their L2 knowledge.

Furthermore, the learners' initiations of corrective utterances similar to the teacher's in their private environments were observed when they were not in a face-threatening situation. In a context like this, the assigned institutional identity of student was weakened and was replaced by a confident expert. These behaviors show that non-nominated students in their private

environments benefit from peer learners' error corrections taking place in the online environment. These sequences also demonstrated the focal students' sensitivity and awareness of the linguistic usage by others.

The current study uniquely illuminates our understanding of learners' correction behaviors that normally cannot be seen in a traditional classroom environment. This revelation can be attributed to the invisibility of the off-screen environment, which creates unique learning opportunities for students.

In the following section I will discuss implications of the studies in terms of research methodology for online language education, L2/FL pedagogy, and second language acquisition (SLA) theories. Across the chapters, in terms of research methodology, rich information about the learners' learning behaviors and processes can be obtained by looking at a mostly unknown aspect of online learning environments. While researchers have relatively easy access to online data, it is important to include the off-screen component of the learning context in order to understand what shapes students' learning environments (Garcia, Standlee, Bechkoff, & Cui, 2009). In online language course research, comparing course delivery formats (i.e., classroom versus online) based on students' learning outcome alone negates the importance of the learning process. Without adequately considering the learners' learning environments, including the offscreen context, such comparisons of learners' outcomes are not equivalent. Although additional SLA research in the online/off-screen environment is needed, my study demonstrates the importance of examining less explored data for informing L2/FL educators, technologists, and SLA theorists. The research design and methods used for this study were successful in providing insight into the important role of the physical/private environment that contributes to enhancing the agency and autonomy of learners in the online/off-screen course settings.

In second language classroom teaching, we need to be aware that what appears in the online/in-class environment can only give a partial picture of learners' learning processes, and an examination of the students' off-screen/physical environment will help us enhance the learners' vigorous efforts and investment on L2 learning, even when the learners are not direct participants in an interaction. We also should value differences in the students' backgrounds and consider having mixed–level classes, that might be helpful to stimulate learners' linguistic competence.

There may be unapparent collaborative work being done among learners in a classroom environment; in this view, language learning is truly a socially enhanced process and construct as advocated by some socially-minded SLA theorists (e.g., Firth and Wagner, 1997, 2007; van Lier, 2000, 2002, 2004).

In terms of SLA research and theory, increased opportunities to verbalize the TL in the off-screen environment imply benefits to students' learning; however, this needs further investigation. Yet, it is highly likely that learners frequently attend to other's linguistic usage, including those with disfluency, when observing their peers' L2 usage in online settings. In fact, the learners' disfluency that demonstrates apparent deviancy from the target form might play a key role in understanding more advanced peer learners' increasing metalinguistic awareness. Additionally, there is a tendency in SLA research to assert that the great part of learning occurs during interactions with teachers or other advanced TL speakers; however, it is possible that learning might actually be enhanced by peers who are less advanced speakers of the language.

In terms of distance language learning, my research contributes to our understanding of learners' off-screen behaviors that have not been explored in past research. In addition, this dissertation offers different perspectives on online learning and teaching based on multiple points of view including those from learners', teachers', and researchers'.

For future consideration of online language education, I suggest that it would be productive to examine not only what appears as the immediate benefit of technology, but also the kinds of affordances and constraints that might be created by users with the given tools. I agree with White (2005, 2006) that such examination should be multidimensional, valuing the experiences from varied perspectives.

In conclusion, as more and more language classes are beginning to be taught online, it is becoming increasingly important for our profession to conduct research and publish our findings on what does and does not work in the online environment. We know that technology will continue to advance at a steady rate. While we can expect that some of these gains will translate into better online teaching tools, we in the SLA profession need to ensure that technology does not enter our classroom purely for the sake of being newer, faster, and more attractive. Rather, we need to advocate for technology that has sound pedagogical merit.

Last, I hope that proper practice in online language education will continue to grow in the future, inspired by applying the theories and research in context. This will provide increasing opportunities for people around the world to learn about and appreciate each others' cultures and languages across borders.

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APPENDIX A

WIMBA SOFTWARE FEATURES



APPENDIX B

SYNCHRONIZED ONLINE AND OFF-SCREEN



APPENDIX C

RECORDING INSTRUCTIONS

Recording instruction

Device loaned/provided:

- Video-camera (including owner's manual, battery charger) ٠
- Tripod
- DVDs
- Envelopes and stamps (distance learners)

- Before class: 1. Plug in the battery charger. 2. Insert DVD
 - - a. Format it as
 - i. Video mode
 - ii. Normal speed (record approximately 110 minutes)
 - Set the camera right next to you and your computer in the following position. The camera must capture YOUR FACE and YOUR HANDS.

GOOD EXAMPLES Camera position



During class:

- 1. Double-check if the battery charger is plugged in.
- 2. Start recording before class begins / before you and your classmates' names are called.
- 3. Just behave as usual.

IMPORTANT:

***Please do not record minors (e.g., children under 18), and illegal activities.

***If you have trouble recording whatever the reason is, do not worry! Just email me and let me know you were not able to record.

After class: 1. Stop recording.

2. IMPORTANT: FINALIZE DVDs (Video mode)

Please remember to finalize your disc once the recording is over (owner's manual p. 47).

- a. Set the camera in a <u>recording mode</u> (if your camera is ready to film an image showing on a screen, that's the recording mode).
- b. Hit a "FINALIZE button" --- it is located next to the battery where the screen is kept.
- c. Battery needs to be fully charged when finalizing the disc.
- d. Set it as a VIDEO MODE.



- 3. Write the date of the recording on the DVD.
- 4. Please deliver or mail TWO DVDs weekly.
- 5. Please remember to charge the battery.

Interview:

Interview will be conducted after the week of the final exam.

APPENDIX D

SAMPLE VIDEO / AUDIO DATA AND TRANSCRIPTION



APPENDIX E

CONVERSATION ANALYSIS TRANSCRIPTION CONVENTION

↑↓	Vertical arrows precede marked pitch movement, over and above normal rhythms of speech. They are used for notable changes in pitch beyond those represented by stops, commas and question marks.	
()	Empty parentheses indicate talk too obscure to transcribe. Words or letters inside such parentheses indicate the transcriber's best estimate of what is being said or who is saying it.	
00	Talk appearing within degree signs is lower in volume relative to surrounding talk.	
[Left-side brackets indicate where overlapping talk begins.	
]	Right-side brackets indicate where overlapping talk ends. Brackets should always appear with one or more other brackets of the same sort (left or right) on the line(s) directly above or below to indicate which turns are implicated in the overlap.	
((coughs))	Words in double parentheses indicate transcriber's comments, not transcriptions.	
(0.8)(.)	Numbers in parentheses indicate intervals without speech in tenths of a second; a dot in parentheses marks an interval of less than (0.2).	
-	A hyphen indicates an abrupt cut-off or self-interruption of the sound in progress indicated by the preceding letter(s) (the example here represents a self-interrupted "because").	
	Colons indicate a lengthening of the sound just preceding them, proportional to the number of colons.	
Under <u>lin</u> ing	Underlining indicates stress or emphasis, proportional to the number of letters underlined.	
?	Question mark for marked rising intonation	

Right and left carats (or "more than" and "less than" symbols) indicate that the talk between them was speeded up or "compressed" relative to surrounding talk.

Equal signs (ordinarily at the end of one line and the start of an ensuing line attributed to a different speaker) indicate a "latched" relationship -- no silence at all between them. If the two lines are attributed to the same speaker and are separated by talk by another, the = marks a single, through-produced utterance by the speaker separated as a transcription convenience to display overlapping talk by another. A single equal sign in the middle of a line indicates no break in an ongoing spate of talk, where one might otherwise expect it, e.g., after a completed sentence.

WOrd Upper case marks especially loud sounds relative to the WORD surrounding talk.

=